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NEWS	2	DEC 01	ChemPort single article sales feature unavailable
NEWS	3	FEB 02	Simultaneous left and right truncation (SLART) added for CERAB, COMPUAB, ELCOM, and SOLIDSTATE
NEWS	4	FEB 02	GENBANK enhanced with SET PLURALS and SET SPELLING
NEWS	5	FEB 06	Patent sequence location (PSL) data added to USGENE
NEWS	6	FEB 10	COMPENDEX reloaded and enhanced
NEWS	7	FEB 11	WTEXTILES reloaded and enhanced
NEWS	8	FEB 19	New patent-examiner citations in 300,000 CA/CAPLUS patent records provide insights into related prior art
NEWS	9	FEB 19	Increase the precision of your patent queries -- use terms from the IPC Thesaurus, Version 2009.01
NEWS	10	FEB 23	Several formats for image display and print options discontinued in USPATFULL and USPAT2
NEWS	11	FEB 23	MEDLINE now offers more precise author group fields and 2009 MeSH terms
NEWS	12	FEB 23	TOXCENTER updates mirror those of MEDLINE - more precise author group fields and 2009 MeSH terms
NEWS	13	FEB 23	Three million new patent records blast AEROSPACE into STN patent clusters
NEWS	14	FEB 25	USGENE enhanced with patent family and legal status display data from INPADOCDB
NEWS	15	MAR 06	INPADOCDB and INPAFAMDB enhanced with new display formats
NEWS	16	MAR 11	EPFULL backfile enhanced with additional full-text applications and grants
NEWS	17	MAR 11	ESBIOBASE reloaded and enhanced
NEWS	18	MAR 20	CAS databases on STN enhanced with new super role for nanomaterial substances
NEWS	19	MAR 23	CA/CAPLUS enhanced with more than 250,000 patent equivalents from China
NEWS	20	MAR 30	IMSPATENTS reloaded and enhanced
NEWS	21	APR 03	CAS coverage of exemplified prophetic substances enhanced
NEWS	22	APR 07	STN is raising the limits on saved answers
NEWS	23	APR 24	CA/CAPLUS now has more comprehensive patent assignee information
NEWS	24	APR 26	USPATFULL and USPAT2 enhanced with patent assignment/reassignment information
NEWS	25	APR 28	CAS patent authority coverage expanded
NEWS	26	APR 28	ENCOMPLIT/ENCOMPLIT2 search fields enhanced
NEWS	27	APR 28	Limits doubled for structure searching in CAS REGISTRY

NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3,

AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.

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=> s (2-7)/li and 1/p and (0.01-1/Ti pr 0.01-1/cu or 0.01-1/zr or 0.01-1/mo or 0.01-1/ta or 0.01-1/w) and (3.5-8)/o

NUMERIC VALUE NOT VALID '1/TI PR 0.01-1'

16344 (2-7)/LI
1115268 1/P
0 0.01-1/TI PR 0.01-1/CU
161544 0.01-1/ZR
290966 0.01-1/MO
60168 0.01-1/TA
154099 0.01-1/W
15546686 (3.5-8)/O

L1 175 (2-7)/LI AND 1/P AND (0.01-1/TI PR 0.01-1/CU OR 0.01-1/ZR OR 0.01-1/MO OR 0.01-1/TA OR 0.01-1/W) AND (3.5-8)/O

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16344 (2-7)/LI
1115268 1/P
297419 0.01-1/TI
493897 0.01-1/CU
161544 0.01-1/ZR
290966 0.01-1/MO
60168 0.01-1/TA
154099 0.01-1/W
15546686 (3.5-8)/O

L2 291 (2-7)/LI AND 1/P AND (0.01-1/TI OR 0.01-1/CU OR 0.01-1/ZR OR 0.01-1/MO OR 0.01-1/TA OR 0.01-1/W) AND (3.5-8)/O

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

93.83

94.05

FILE 'CAPLUS' ENTERED AT 17:36:52 ON 05 MAY 2009

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FILE COVERS 1907 - 5 May 2009 VOL 150 ISS 19

FILE LAST UPDATED: 4 May 2009 (20090504/ED)

Caplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2008.

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L1 175 S (2-7)/LI AND 1/P AND (0.01-1/TI PR 0.01-1/CU OR 0.01-1/ZR OR

L2 291 S (2-7)/LI AND 1/P AND (0.01-1/TI OR 0.01-1/CU OR 0.01-1/ZR OR

FILE 'CAPLUS' ENTERED AT 17:36:52 ON 05 MAY 2009

```
=> s l2 and (anode or electrode) and battery and (tin or silicon)
    116 L2
    168251 ANODE
    75040 ANODES
    189472 ANODE
        (ANODE OR ANODES)
    589958 ELECTRODE
    430742 ELECTRODES
    753481 ELECTRODE
        (ELECTRODE OR ELECTRODES)
    157173 BATTERY
    121928 BATTERIES
    171151 BATTERY
        (BATTERY OR BATTERIES)
    319330 TIN
        707 TINS
    319773 TIN
        (TIN OR TINS)
    935916 SILICON
        437 SILICONS
    936066 SILICON
        (SILICON OR SILICONS)
L3          9 L2 AND (ANODE OR ELECTRODE) AND BATTERY AND (TIN OR SILICON)
```

```
=> s l2 and (anode or electrode) and battery
    116 L2
    168251 ANODE
    75040 ANODES
    189472 ANODE
        (ANODE OR ANODES)
    589958 ELECTRODE
    430742 ELECTRODES
    753481 ELECTRODE
        (ELECTRODE OR ELECTRODES)
    157173 BATTERY
    121928 BATTERIES
    171151 BATTERY
        (BATTERY OR BATTERIES)
L4          27 L2 AND (ANODE OR ELECTRODE) AND BATTERY
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=> d (1-27) ibib ti it abs
'(1-27)' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'
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DALL ----- ALL, delimited (end of each field identified)
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FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
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PATS ----- PI, SO
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 ISTD ----- STD, indented with text labels

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 HITSEQ ----- HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and
 its structure diagram
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 KWIC ----- Hit term plus 20 words on either side
 OCC ----- Number of occurrence of hit term and field in which it occurs

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ENTER DISPLAY FORMAT (BIB):ibib

L4 ANSWER 1 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2009:296069 CAPLUS
 DOCUMENT NUMBER: 150:310372
 TITLE: Rechargeable lithium battery with an
 anode containing lithium-vanadium-based oxide
 INVENTOR(S): Park, Su-Yeong; Choi, Nam-Soon; Yew, Kyoung-Han; Lee,
 Doo-Kyoung; Kim, Sung-Soo
 PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
 SOURCE: U.S. Pat. Appl. Publ., 12pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20090068566	A1	20090312	US 2008-208672	20080911
KR 2009027498	A	20090317	KR 2007-92763	20070912
CN 101388476	A	20090318	CN 2008-10149608	20080911
PRIORITY APPLN. INFO.:			KR 2007-92763	A 20070912
OTHER SOURCE(S):	MARPAT 150:310372			

=> d 2-27 ibib ti it abs

L4 ANSWER 2 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2008:1222514 CAPLUS
 DOCUMENT NUMBER: 149:451827
 TITLE: Electrode for rechargeable lithium
 battery and rechargeable lithium
 battery including same
 INVENTOR(S): Jung, Euy-Young; Hwang, Duck-Chul; Park, Yong-Chul;
 Kim, Jeom-Soo; Lee, Jong-Hwa; Ryu, Jae-Yul; Hur,
 So-Hyun
 PATENT ASSIGNEE(S): Samsung Sdi Co., Ltd, S. Korea
 SOURCE: U.S. Pat. Appl. Publ., 12pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20080248396	A1	20081009	US 2007-751958	20070522
KR 2008090655	A	20081009	KR 2007-33744	20070405
PRIORITY APPLN. INFO.:			KR 2007-33744	A 20070405

TI Electrode for rechargeable lithium battery and
 rechargeable lithium battery including same
 IT Battery electrodes
 Coating materials
 Conducting polymers
 Mesophase
 (electrode for rechargeable lithium battery and
 rechargeable lithium battery including same)
 IT Fluoropolymers, uses
 Nitrile rubber, uses
 Polyolefins
 Polyoxyalkylenes, uses
 Polyurethanes, uses
 Styrene-butadiene rubber, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrode for rechargeable lithium battery and
 rechargeable lithium battery including same)
 IT Carbon fibers, uses
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (graphite; electrode for rechargeable lithium battery
 and rechargeable lithium battery including same)
 IT Secondary batteries
 (lithium; electrode for rechargeable lithium battery
 and rechargeable lithium battery including same)
 IT Pitch fibers
 (mesophase; electrode for rechargeable lithium
 battery and rechargeable lithium battery including
 same)
 IT 1314-62-1, Vanadium oxide (V2O5), uses 1317-33-5, Molybdenum sulfide

(MoS₂), uses 7429-90-5, Aluminum, uses 7447-41-8, Lithium chloride, uses 7784-30-7, Aluminum phosphate alpo₄ 7791-03-9, Lithium perchlorate 9002-84-0, Ptf_e 9002-89-5, Polyvinyl alcohol 9003-19-4, Polyvinylether 9003-20-7, Polyvinyl acetate 9003-22-9, Vinyl acetate-vinyl chloride copolymer 9003-39-8, Polyvinylpyrrolidone 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9004-35-7 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 10377-51-2, Lithium iodide 12017-96-8, Chromium lithium oxide (CrLiO₂) 12022-46-7, Iron lithium oxide (FeLiO₂) 12039-13-3, Titanium sulfide (TiS₂) 12057-19-1, Lithium titanium oxide (LiTiO₂) 12162-87-7, Lithium vanadium oxide livo₂ 12162-92-4, Lithium vanadium oxide (LiV₂O₅) 12169-03-8, Lithium yttrium oxide (LiYO₂) 12190-79-3, Cobalt lithium oxide (CoLiO₂) 12201-18-2, Lithium molybdenum sulfide (LiMoS₂) 12209-15-3, Lithium scandium oxide lisco₂ 13446-24-7, Magnesium phosphate mg₂p₂o₇ 13568-36-0, Lithium nickel vanadium oxide (LiNiVO₄) 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Polyvinylidene fluoride 25014-41-9, Polyacrylonitrile 25067-11-2, Hexafluoropropylene-tetrafluoroethylene copolymer 25086-89-9 25322-68-3, Peo 27360-07-2 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 37220-89-6, Lithium aluminate 55326-82-4, Lithium titanium sulfide litis₂ 90076-65-6 131651-65-5, Lithium nonafluorobutanesulfonate 132843-44-8 244761-29-3, Lithium bisoxalatoborate 329025-35-6, Iron lithium phosphate (Fe₂Li₁₋₃(PO₄)₃) 717133-99-8D, Butylene-ethylene-styrene triblock copolymer, sulfonated 884323-28-8, Lithium vanadium phosphate (Li₀₋₃V₂(PO₄)₃) 884323-29-9, Chromium lithium phosphate (Cr₂Li₀₋₃(PO₄)₃) 884323-30-2, Lithium manganese phosphate (Li₀₋₃Mn₂(PO₄)₃) 884323-31-3, Cobalt lithium phosphate (Co₂Li₀₋₃(PO₄)₃) 884323-32-4, Copper lithium phosphate (Cu₂Li₀₋₃(PO₄)₃) 1021187-13-2, uses 1067881-17-7, Lithium nickel phosphate (Li₀₋₃Ni₂(PO₄)₃)

RL: TEM (Technical or engineered material use); USES (Uses)
(electrode for rechargeable lithium battery and
rechargeable lithium battery including same)

IT 9003-18-3

RL: TEM (Technical or engineered material use); USES (Uses)
(nitrile rubber; electrode for rechargeable lithium
battery and rechargeable lithium battery including
same)

IT 9003-55-8

RL: TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene rubber; electrode for rechargeable lithium
battery and rechargeable lithium battery including
same)

AB

An electrode, for a rechargeable lithium battery,
includes a current collector; an active material layer disposed on the
current collector; and a coating layer disposed on the active material
layer. The coating layer includes a lithium ion conductive polymer and an
inorg. material represented by Formula 1: M_wH_xPyO_z, wherein M is an
element selected from the group consisting of an alkali metal, an
alkaline-earth metal, a Group 13 element, a Group 14 element, a transition
element, a rare earth element, and a combination thereof; and
1≤w≤4, 0≤x≤4, 1≤y≤7, and
2≤z≤30.

L4 ANSWER 3 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:611535 CAPLUS

DOCUMENT NUMBER: 148:565385

TITLE: Secondary lithium batteries with high
reliability at high temperature and electrode
for them

INVENTOR(S): Kato, Takashi
 PATENT ASSIGNEE(S): Ohara Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 14pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008117543	A	20080522	JP 2006-297183	20061031
PRIORITY APPLN. INFO.:			JP 2006-297183	20061031
TI	Secondary lithium batteries with high reliability at high temperature and electrode for them			
IT	Glass ceramics (aluminophosphosilicate or phosphate; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)			
IT	Secondary batteries (lithium; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)			
IT	Battery electrodes (secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)			
IT	936615-64-4P	1025484-11-0P	RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (glass-ceramics; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)	
IT	951764-45-7		RL: TEM (Technical or engineered material use); USES (Uses) (glass-ceramics; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)	
AB	The batteries employ ion-conductive nonaq. electrolytic solns., and cathodes and/or anodes containing Li ion-conductive inorg. solid electrolyte powders $Li_{1+x+y}(Al,Ga)_x(Ti,Ge)_2-xSi_yP_3-yO_{12}$ ($x, y = 0-1$), preferably Li mixed oxide glass ceramics. The powders inhibit reactions between electrode active mass and nonaq. electrolytic solns. at high temperature, contributing to high capacity retention of the batteries after repeated cycles.			

L4 ANSWER 4 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:611476 CAPLUS
 DOCUMENT NUMBER: 148:565382
 TITLE: Secondary lithium batteries with high reliability at high temperature and anodes for them

INVENTOR(S): Kato, Takashi
 PATENT ASSIGNEE(S): Ohara Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008117542	A	20080522	JP 2006-297178	20061031
US 20080241698	A1	20081002	US 2007-931491	20071031
PRIORITY APPLN. INFO.:			JP 2006-297178	A 20061031

TI Secondary lithium batteries with high reliability at high temperature and anodes for them

IT Glass ceramics
(aluminophosphosilicate or phosphate; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)

IT Secondary batteries
(lithium; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)

IT Battery electrodes
Safety
(secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)

IT 936615-64-4P 1025484-11-0P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(glass-ceramics; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)

IT 951764-45-7
RL: TEM (Technical or engineered material use); USES (Uses)
(glass-ceramics; secondary lithium batteries with electrodes containing Li mixed oxide glass ceramics)

AB The batteries employ cathodes and/or anodes containing <5% Li ion-conductive inorg. solid electrolyte powders, and ion-conductive nonaq. electrolytic solns. Preferably, the electrolyte powders contain crystals represented by $\text{Li}_{1+x+y}(\text{Al}, \text{Ga})_x(\text{Ti}, \text{Ge})_{2-x} \text{Si}_y \text{P}_3 \text{O}_{12}$ ($x, y = 0-1$), more preferably Li mixed oxide glass ceramics. The powders inhibit reactions between electrode active mass and nonaq. electrolytic solns. at high temperature, contributing to high capacity retention of the batteries after repeated cycles, and to safety.

L4 ANSWER 5 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2007:175015 CAPLUS

DOCUMENT NUMBER: 146:232778

TITLE: Compliant seal structures for protected active metal anodes

INVENTOR(S): Visco, Steven J.; Nimon, Yevgeniy S.; De Jonghe, Lutgard C.; Katz, Bruce D.; Petrov, Alexei

PATENT ASSIGNEE(S): Polyplus Battery Company, USA

SOURCE: U.S. Pat. Appl. Publ., 54pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20070037058	A1	20070215	US 2006-501676	20060808
AU 2006280097	A1	20070222	AU 2006-280097	20060808
CA 2618635	A1	20070222	CA 2006-2618635	20060808
WO 2007021717	A2	20070222	WO 2006-US30985	20060808
WO 2007021717	A3	20071004		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,				

	CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,	
	GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,	
	KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA	
EP 1917689	A2 20080507	EP 2006-813340 20060808
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,	
	IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL,	
	BA, HR, MK, RS	
JP 2009505355	T 20090205	JP 2008-526152 20060808
US 20070051620	A1 20070308	US 2006-514678 20060901
MX 2008002074	A 20080422	MX 2008-2074 20080211
US 20080182157	A1 20080731	US 2008-32564 20080215
KR 2008036139	A 20080424	KR 2008-705683 20080307
CN 101313426	A 20081126	CN 2006-80037611 20080409
PRIORITY APPLN. INFO.:		US 2005-706886P P 20050809
		US 2005-713668P P 20050902
		US 2006-501676 A2 20060808
		WO 2006-US30985 W 20060808
TI	Compliant seal structures for protected active metal anodes	
IT	Laminated materials	
	(Laminate 95014; compliant seal structures for protected active metal anodes)	
IT	Glass, uses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(active metal phosphorus oxynitride; compliant seal structures for protected active metal anodes)	
IT	Battery anodes	
	Glass ceramics	
	Primary batteries	
	Sealing compositions	
	Seals (parts)	
	Seawater	
	(compliant seal structures for protected active metal anodes)	
IT	Fluoropolymers, uses	
	Polyoxyalkylenes, uses	
	RL: MOA (Modifier or additive use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Alkali metals, uses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Epoxy resins, uses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Halides	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Nitrides	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Polyamides, uses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Selenide glasses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Sulfide glasses	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(compliant seal structures for protected active metal anodes)	
IT	Group VA element compounds	
	RL: TEM (Technical or engineered material use); USES (Uses)	
	(phosphides; compliant seal structures for protected active metal anodes)	
IT	9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 24937-79-9,	

Pvdf 25014-41-9, Polyacrylonitrile 25322-68-3, Peo

RL: MOA (Modifier or additive use); USES (Uses)

(compliant seal structures for protected active metal anodes)

IT 96-47-9, 2-Methyltetrahydrofuran 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 646-06-0, 1,3-Dioxolane 1308-80-1, Copper nitride (Cu₃N) 1314-80-3, Phosphorus sulfide (P₂S₅) 2926-30-9 7429-90-5, Aluminum, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 7440-23-5, Sodium, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-43-9, Cadmium, uses 7440-44-0D, Carbon, intercalation compound 7440-55-3, Gallium, uses 7440-69-9, Bismuth, uses 7440-70-2, Calcium, uses 7440-74-6, Indium, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7601-89-0, Sodium perchlorate 7789-24-4, Lithium fluoride, uses 7791-03-9, Lithium perchlorate 9003-27-4, Polyisobutylene 10377-51-2, Lithium iodide 10377-52-3, Lithium phosphate 12005-48-0, Aluminum sodium oxide Al₂₂Na₂O₃₄ 12005-86-6, Sodium hexafluoroarsenate 12024-22-5, Gallium sulfide (Ga₂S₃) 12025-34-2, Germanium sulfide (GeS₂) 12057-29-3, Lithium phosphide (Li₃P) 12136-58-2, Lithium sulfide 12505-59-8, Aluminum lithium oxide (Al₁₁LiO₁₇) 13755-29-8, Sodium tetrafluoroborate 13759-10-9, Silicon sulfide (SiS₂) 14283-07-9, Lithium tetrafluoroborate 16986-74-6, Iron sodium phosphate Fe₂Na₃(PO₄)₃ 21324-39-0, Sodium hexafluorophosphate 21324-40-3, Lithium hexafluorophosphate 26134-62-3, Lithium nitride (Li₃N) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 36058-25-0, Iron lithium phosphate Fe₂Li₃(PO₄)₃ 37220-89-6, Lithium β-alumina 58572-20-6, Sodium zirconium phosphate silicate (Na₃Zr₂(PO₄)(SiO₄)₂) 64890-77-3, Gadolinium sodium silicate GdNa₅(SiO₃)₄ 65545-67-7, Dysprosium sodium silicate DyNa₅(SiO₃)₄ 70780-99-3, Lisicon 77641-62-4, Nasicon 81295-89-8, Lithium zirconium phosphate silicate (Li₃Zr₂(PO₄)(SiO₄)₂) 84953-65-1, Sodium zirconium phosphate Na₅Zr(PO₄)₃ 89072-99-1, Nasiglas 90076-65-6 91742-21-1 98537-01-0, Sodium titanium phosphate Na₅Ti(PO₄)₃ 106860-09-7, Niobium sodium phosphate NbNa₄(PO₄)₃ 132843-44-8 152894-04-7 171899-89-1, Lithium titanium phosphate Li₅Ti(PO₄)₃ 183113-86-2, Neodymium sodium silicate (NdNa₅(SiO₃)₄) 184905-46-2, Lithium nitrogen phosphorus oxide 236388-76-4, Lithium phosphide sulfide 252651-45-9, Lithium zirconium phosphate Li₅Zr(PO₄)₃ 722493-10-9, Hysol E 120HP 924882-22-4, Lanthanum lithium titanium oxide (La_{0.5}Li_{0.3}TiO₃) 924882-23-5

RL: TEM (Technical or engineered material use); USES (Uses)

(compliant seal structures for protected active metal anodes)

IT 11138-49-1, Sodium β-alumina

RL: TEM (Technical or engineered material use); USES (Uses)

(of β-alumina type, of β-alumina type; compliant seal structures for protected active metal anodes)

AB Protected anode architectures have ionically conductive protective membrane architectures that, in conjunction with compliant seal structures and anode backplanes, effectively enclose an active metal anode inside the interior of an anode compartment. This enclosure prevents the active metal from deleterious reaction with the environment external to the anode compartment, which may include aqueous, ambient moisture, and/or other materials corrosive to the active metal. The compliant seal structures are substantially impervious to anolytes, catholytes, dissolved species in electrolytes, and moisture and compliant to changes in anode volume such that phys. continuity between the anode protective architecture and backplane are maintained. The protected anode architectures can be used in arrays of protected anode architectures and battery cells of various configurations incorporating the protected anode architectures or arrays.

ACCESSION NUMBER: 2006:677807 CAPLUS
 DOCUMENT NUMBER: 145:149067
 TITLE: Cathode for secondary lithium battery and the battery
 INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 35 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006073104	A1	20060713	WO 2005-JP24026	20051228
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, ME, ZM, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CN 101099250	A	20080102	CN 2005-80046088	20051228
US 20070292759	A1	20071220	US 2007-794089	20070625
KR 2007091182	A	20070907	KR 2007-715333	20070704
PRIORITY APPLN. INFO.:			JP 2005-1199	A 20050106
			WO 2005-JP24026	W 20051228
TI	Cathode for secondary lithium battery and the battery			
IT	Battery cathodes (cathodes containing inorg. compds. coated lithium transition metal oxide layers for secondary lithium batteries)			
IT	12057-17-9, Lithium manganese oxide (LiMn2O4) 12190-79-3, Cobalt lithium oxide (CoLiO2) RL: DEV (Device component use); USES (Uses) (cathodes containing inorg. compds. coated lithium transition metal oxide layers for secondary lithium batteries)			
IT	13453-69-5 782495-49-2, Lithium manganese oxide phosphate (Li2.8Mn0.200.3(PO4)) 782495-51-6, Cobalt lithium oxide phosphate (Co0.2Li2.800.17(PO4)) 782495-52-7, Lithium nickel oxide phosphate (Li2.8Ni0.200.1(PO4)) 782495-53-8, Copper lithium oxide phosphate (Cu0.2Li2.800.1(PO4)) 782495-54-9, Lithium zirconium oxide phosphate (Li2.8Zr0.200.3(PO4)) 782495-56-1, Lithium molybdenum oxide phosphate (Li2.8Mo0.200.5(PO4)) 782495-58-3, Lithium tantalum oxide phosphate (Li2.8Ta0.200.4(PO4)) 782495-59-4, Lithium tungsten oxide phosphate (Li2.8W0.200.5(PO4)) 782495-60-7, Lithium titanium oxide phosphate (Li4Ti0.250(PO4)) 782495-63-0, Lithium manganese oxide phosphate (Li3.25Mn0.250(PO4)) 782495-65-2, Lithium molybdenum oxide phosphate (Li3.5Mo0.250(PO4)) 782495-66-3, Lithium tantalum oxide phosphate (Li3.75Ta0.250(PO4)) 782495-67-4, Lithium tungsten oxide phosphate (Li3.5W0.250(PO4)) 782495-69-6, Lithium tungsten oxide phosphate (Li3.02W0.0100.04(PO4)) 782495-70-9, Lithium tungsten oxide phosphate (Li3.2W0.100.4(PO4)) 782495-72-1, Lithium tungsten oxide phosphate (Li3.66W0.3301.32(PO4))			

782495-74-3, Lithium tungsten oxide phosphate (Li₅WO₄(PO₄))
 782495-76-5, Lithium tungsten oxide phosphate (Li₇W₂O₈(PO₄))
 816415-85-7, Boron lithium nitride oxide (BLi_{0.8}N_{0.3}O_{1.45}) 816416-34-9,
 Germanium lithium nitride oxide (GeLi_{1.8}N_{0.3}O_{2.45}) 816416-38-3, Aluminum
 lithium nitride oxide (ALi_{0.8}N_{0.3}O_{1.45}) 816416-40-7, Aluminum lithium
 nitride oxide (ALi_{4.8}N_{0.3}O_{3.45}) 816416-42-9, Carbon lithium nitride
 oxide (CLi_{1.8}N_{0.3}O_{2.45}) 816416-44-1, Gallium lithium nitride oxide
 (GaLi_{0.8}N_{0.3}O_{1.45}) 816416-46-3, Lithium sulfur nitride oxide
 (Li_{1.8}SN_{0.3}O_{3.45}) 816416-50-9, Boron lithium nitride oxide silicate
 (B_{0.5}Li_{2.3}N_{0.3}O_{0.45}(SiO₄)_{0.5}) 816416-52-1, Germanium lithium nitride
 oxide silicate (Ge_{0.5}Li_{3.8}N_{0.3}O_{1.45}(SiO₄)_{0.5}) 816416-54-3, Carbon
 lithium nitride oxide silicate (C_{0.5}Li_{2.8}N_{0.3}O_{2.95}(SiO₄)_{0.5}) 816416-56-5
 , Lithium silicon nitride oxide sulfate (Li_{2.8}Si_{0.5}N_{0.3}O_{1.45}(SO₄)_{0.5})
 816416-60-1, Aluminum lithium borate nitride oxide
 (Al_{0.5}Li_{2.8}(BO₃)_{0.5}N_{0.3}O_{0.95}) 816416-62-3, Boron lithium carbonate
 nitride oxide (B_{0.5}Li_{1.3}(CO₃)_{0.5}N_{0.3}O_{0.45}) 816416-66-7, Boron lithium
 nitride oxide sulfate (B_{0.5}Li_{1.3}N_{0.3}O_{0.45}(SO₄)_{0.5}) 816416-68-9
 816416-70-3, Germanium lithium nitride oxide sulfate
 (Ge_{0.5}Li_{2.8}N_{0.3}O_{1.45}(SO₄)_{0.5}) 816416-72-5, Aluminum gallium lithium
 nitride oxide (Al_{0.5}Ga_{0.5}Li_{2.8}N_{0.3}O_{2.45}) 816416-74-7, Carbon lithium
 nitride oxide sulfate (C_{0.5}Li_{1.8}N_{0.3}O_{0.95}(SO₄)_{0.5}) 882681-95-0,
 Lithium titanium oxide phosphate (Li_{2.8}Ti_{0.2}O_{0.3}(PO₄)) 882682-19-1
 , Lithium zirconium oxide phosphate (Li₄Zr_{0.25}O(PO₄)) 882682-64-6,
 Lithium silicon nitride oxide (Li_{1.8}SiN_{0.5}O_{2.15}) 884739-67-7, Lithium
 silicon nitride oxide (Li_{1.8}SiN_{0.3}O_{2.45}) 884739-67-7, Lithium silicon
 nitride oxide (Li_{1.8}SiN_{0.3}O_{2.45}) 885096-04-8, Lithium silicon nitride
 oxide (Li_{1.8}SiN_{0.01}O_{2.88}) 898252-52-3, Lithium oxide silicate
 (Li_{1.8}O_{0.39}(Si₂O₅)_{0.5}) 898252-53-4, Lithium silicon nitride oxide
 (Li_{1.8}SiN_{0.6}O₂) 898252-54-5, Lithium silicon nitride oxide
 (Li_{1.8}SiN_{0.8}O_{1.7}) 898252-55-6, Lithium silicon nitride oxide
 (Li_{1.8}SiN_{0.1}O₄) 944251-30-3

RL: MOA (Modifier or additive use); USES (Uses)

(cathodes containing inorg. compds. coated lithium transition metal oxide
 layers for secondary lithium batteries)

AB The cathode has a conductive collector, a cathode active mass layer containing
 a compound which consists Co, Ni, and/or Mn and in contact with the
 collector, and a coating layer composed of a Li+-conductive inorg. compound:
 Li_xPTyO_z [T = Ti, Cu, Zr, Mo, Co, Ni, Mn, Ta and/or W; x = 2-7; and y =
 0.01-1; and z = 3.5-8] or Li_aMO_bN_c [M = Si, B, Ge, Al, C, Ga, and/or S; (a
 = 0.6-1; b = 1.05-1.99, c = 0.01-0.5), (a = 1.6-2; b = 2.05-2.99, c =
 0.01-0.5), (a = 1.6-2; b = 3.05-3.99, c = 0.01-0.5), or (a = 4.6-5; b =
 3.05-3.99, c = 0.01-0.5)] and formed on ≥1 part of the cathode
 active mass layer. The battery has the above cathode, a
 Li+-conductive electrode, and a Li-intercalating anode

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:443057 CAPLUS

DOCUMENT NUMBER: 144:436139

TITLE: Solid electrolyte lithium battery using
 lithium phosphorus mixed oxide or lithium mixed
 oxynitride electrolyte

INVENTOR(S): Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito,
 Shuji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	JP 2006120437	A	20060511	JP 2004-306650	20041021
PRIORITY APPLN. INFO.:				JP 2004-306650	20041021
TI	Solid electrolyte lithium battery using lithium phosphorus mixed oxide or lithium mixed oxynitride electrolyte				
IT	Battery electrolytes				
	Solid electrolytes				
	(solid electrolyte Li battery with long cycle life using Li-P-transition metal mixed oxide or Li mixed oxynitride electrolyte)				
IT	782495-23-2, Lithium titanium metaphosphate oxide (Li _{2.8} Ti _{0.2} (PO ₃)O _{0.9})				
	782495-24-3, Lithium vanadium metaphosphate oxide (Li _{2.8} V _{0.2} (PO ₃)O _{0.9})				
	782495-25-4, Chromium lithium metaphosphate oxide (Cr _{0.2} Li _{2.8} (PO ₃)O _{0.9})				
	782495-26-5, Lithium manganese metaphosphate oxide (Li _{2.8} Mn _{0.2} (PO ₃)O _{0.9})				
	782495-27-6, Iron lithium metaphosphate oxide (Fe _{0.2} Li _{2.8} (PO ₃)O _{0.9})				
	782495-28-7, Cobalt lithium metaphosphate oxide (Co _{0.2} Li _{2.8} (PO ₃)O _{0.9})				
	782495-29-8, Lithium nickel metaphosphate oxide (Li _{2.8} Ni _{0.2} (PO ₃)O _{0.9})				
	782495-30-1, Copper lithium metaphosphate oxide (Cu _{0.2} Li _{2.8} (PO ₃)O _{0.9})				
	782495-31-2, Lithium zirconium metaphosphate oxide (Li _{2.8} Zr _{0.2} (PO ₃)O _{0.9})				
	782495-32-3, Lithium niobium metaphosphate oxide (Li _{2.8} Nb _{0.2} (PO ₃)O _{0.9})				
	782495-33-4, Lithium molybdenum metaphosphate oxide (Li _{2.8} Mo _{0.2} (PO ₃)O _{0.9})				
	782495-34-5, Lithium ruthenium metaphosphate oxide (Li _{2.8} Ru _{0.2} (PO ₃)O _{0.9})				
	782495-35-6, Lithium silver metaphosphate oxide (Li _{2.8} Ag _{0.2} (PO ₃)O _{0.9})				
	782495-36-7, Lithium tantalum metaphosphate oxide (Li _{2.8} Ta _{0.2} (PO ₃)O _{0.9})				
	782495-37-8, Lithium tungsten metaphosphate oxide (Li _{2.8} W _{0.2} (PO ₃)O _{0.9})				
	782495-38-9, Lithium platinum metaphosphate oxide (Li _{2.8} Pt _{0.2} (PO ₃)O _{0.9})				
	782495-39-0, Gold lithium metaphosphate oxide (Au _{0.2} Li _{2.8} (PO ₃)O _{0.9})				
	782495-41-4, Lithium tungsten metaphosphate oxide (Li _{2.8} W _{0.01} (PO ₃)O _{0.9})				
	782495-42-5, Lithium tungsten metaphosphate oxide (Li _{2.8} W _{0.05} (PO ₃)O _{0.9})				
	782495-43-6, Lithium tungsten metaphosphate oxide (Li _{2.8} W _{0.1} (PO ₃)O _{0.9})				
	782495-44-7, Lithium tungsten metaphosphate oxide (Li _{2.8} W _{0.5} (PO ₃)O _{0.9})				
	782495-47-0, Lithium vanadium oxide phosphate (Li _{2.8} V _{0.2} O _{0.4} (PO ₄))				
	782495-48-1, Chromium lithium oxide phosphate (Cr _{0.2} Li _{2.8} O _{0.2} (PO ₄))				
	782495-49-2, Lithium manganese oxide phosphate (Li _{2.8} Mn _{0.2} O _{0.3} (PO ₄))				
	782495-50-5, Iron lithium oxide phosphate (Fe _{0.2} Li _{2.8} O _{0.17} (PO ₄))				
	782495-51-6, Cobalt lithium oxide phosphate (Co _{0.2} Li _{2.8} O _{0.17} (PO ₄))				
	782495-52-7, Lithium nickel oxide phosphate (Li _{2.8} Ni _{0.2} O _{0.1} (PO ₄))				
	782495-53-8, Copper lithium oxide phosphate (Cu _{0.2} Li _{2.8} O _{0.1} (PO ₄))				
	782495-54-9, Lithium zirconium oxide phosphate (Li _{2.8} Zr _{0.2} O _{0.3} (PO ₄))				
	782495-55-0, Lithium niobium oxide phosphate (Li _{2.8} Nb _{0.2} O _{0.4} (PO ₄))				
	782495-56-1, Lithium molybdenum oxide phosphate (Li _{2.8} Mo _{0.2} O _{0.5} (PO ₄))				
	782495-57-2, Lithium silver phosphate (Li _{2.8} Ag _{0.2} (PO ₄))				
	782495-58-3, Lithium tantalum oxide phosphate (Li _{2.8} Ta _{0.2} O _{0.4} (PO ₄))				
	782495-59-4, Lithium tungsten oxide phosphate (Li _{2.8} W _{0.2} O _{0.5} (PO ₄))				
	782495-60-7, Lithium titanium oxide phosphate (Li ₄ Ti _{0.25} O _{0.5} (PO ₄))				
	782495-61-8, Lithium vanadium oxide phosphate (Li _{3.75} V _{0.25} O _{0.5} (PO ₄))				
	782495-62-9, Chromium lithium oxide phosphate (Cr _{0.25} Li _{3.5} O _{0.5} (PO ₄))				
	782495-63-0, Lithium manganese oxide phosphate (Li _{3.25} Mn _{0.25} O _{0.5} (PO ₄))				
	782495-64-1, Lithium niobium oxide phosphate (Li _{3.75} Nb _{0.25} O _{0.5} (PO ₄))				
	782495-65-2, Lithium molybdenum oxide phosphate (Li _{3.5} Mo _{0.25} O _{0.5} (PO ₄))				
	782495-66-3, Lithium tantalum oxide phosphate (Li _{3.75} Ta _{0.25} O _{0.5} (PO ₄))				
	782495-67-4, Lithium tungsten oxide phosphate (Li _{3.5} W _{0.25} O _{0.5} (PO ₄))				
	782495-69-6, Lithium tungsten oxide phosphate (Li _{3.02} W _{0.01} O _{0.04} (PO ₄))				
	782495-70-9, Lithium tungsten oxide phosphate (Li _{3.2} W _{0.1} O _{0.4} (PO ₄))				
	782495-72-1, Lithium tungsten oxide phosphate (Li _{3.66} W _{0.33} O _{1.32} (PO ₄))				
	782495-74-3, Lithium tungsten oxide phosphate (Li ₅ W ₀₄ (PO ₄))				
	816415-85-7, Boron lithium nitride oxide				

(BLi0.8N0.3O1.45) 816416-34-9, Germanium lithium nitride oxide
 (GeLi1.8N0.3O2.45) 816416-38-3, Aluminum lithium nitride oxide
 (AlLi0.8N0.3O1.45) 816416-40-7, Aluminum lithium nitride oxide
 (AlLi4.8N0.3O3.45) 816416-42-9, Carbon lithium nitride oxide
 (CLi1.8N0.3O2.45) 816416-44-1, Gallium lithium nitride oxide
 (GaLi0.8N0.3O1.45) 816416-46-3, Lithium sulfur nitride oxide
 (Li1.8SN0.3O3.45) 816416-50-9, Boron lithium nitride oxide silicate
 (B0.5Li2.3N0.3O0.45(SiO4)0.5) 816416-52-1, Germanium lithium nitride
 oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) 816416-54-3, Carbon
 lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5)
 816416-56-5, Lithium silicon nitride oxide sulfate
 (Li2.8Si0.5N0.3O1.45(SO4)0.5) 816416-58-7, Germanium lithium borate
 nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) 816416-60-1, Aluminum
 lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) 816416-62-3,
 Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45)
 816416-64-5, Gallium lithium borate nitride oxide
 (Ga0.5Li0.8(BO2)0.5N0.3O0.45) 816416-66-7, Boron lithium nitride oxide
 sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) 816416-68-9 816416-70-3,
 Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5)
 816416-72-5, Aluminum gallium lithium nitride oxide
 (Al0.5Ga0.5Li2.8N0.3O2.45) 816416-74-7, Carbon lithium nitride oxide
 sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0, Lithium
 titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1,
 Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) 882682-64-6, Lithium
 silicon nitride oxide (Li1.8SiN0.5O2.15) 884739-67-7, Lithium silicon
 nitride oxide (Li1.8SiN0.3O2.45) 885096-04-8, Lithium silicon nitride
 oxide (Li1.8SiN0.01O2.88) 885096-05-9, Lithium silicon nitride oxide
 (Li1.8SiN0.1O2.75)

RL: DEV (Device component use); USES (Uses)

(solid electrolyte Li battery with long cycle life using

Li-P-transition metal mixed oxide or Li mixed oxynitride electrolyte)

AB The disclosed battery has a Li ion-conductive solid electrolyte
 and amorphous SiO₂ which is chemical bonded to the interfaces between the
 electrolyte and anode and/or cathode active mass, wherein the
 electrolyte is a compound represented by (1) Li_xPTyO_z (T = Ti, V, Cr, Mn,
 Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ag, Ta, W, Pt and/or Au; x = 2.0-7.0; y =
 0.01-1.0; z = 3.5-8.0) or (2) Li_xMO_yN_z [M = Si, B, Ge, Al, C, Ga and/or S;
 x = 0.6-1.0, y = 1.05-1.99, z = 0.01-0.5; x = 1.6-2.0, y = 2.05-2.99, z =
 0.01-0.5; x = 1.6-2.0, y = 3.05-3.99, z = 0.01-0.5; or x = 4.6-5.0, y =
 3.05-3.99, z = 0.01-0.5]. The solid electrolyte has high moisture
 resistance and ion conductivity, and the battery shows low internal
 resistance and long cycle life.

L4 ANSWER 8 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:443021 CAPLUS

DOCUMENT NUMBER: 144:436133

TITLE: Lithium secondary batteries having
 wet-stable oxide or nitride-based ionic conductors and
 their anodes

INVENTOR(S): Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito,
 Shuji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006120337	A	20060511	JP 2004-304089	20041019

PRIORITY APPLN. INFO.:

JP 2004-304089

20041019

- TI Lithium secondary batteries having wet-stable oxide or
nitride-based ionic conductors and their anodes
- IT Secondary batteries
(button-type; manufacture of lithium secondary batteries having
wet-stable oxide or nitride-based ionic conductors)
- IT Secondary batteries
(lithium; manufacture of lithium secondary batteries having
wet-stable oxide or nitride-based ionic conductors)
- IT Battery anodes
Ionic conductors
(manufacture of lithium secondary batteries having wet-stable
oxide or nitride-based ionic conductors)
- IT 7440-50-8, Copper, uses
RL: DEV (Device component use); USES (Uses)
(anode components; manufacture of lithium secondary
batteries having wet-stable oxide or nitride-based ionic
conductors)
- IT 782495-23-2P, Lithium titanium metaphosphate oxide
($\text{Li}_{2.8}\text{Ti}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-24-3P, Lithium vanadium metaphosphate oxide
($\text{Li}_{2.8}\text{V}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-25-4P, Chromium lithium metaphosphate oxide
($\text{Cr}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-26-5P, Lithium manganese metaphosphate
oxide ($\text{Li}_{2.8}\text{Mn}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-27-6P, Iron lithium metaphosphate
oxide ($\text{Fe}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-28-7P, Cobalt lithium metaphosphate
oxide ($\text{Co}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-29-8P, Lithium nickel metaphosphate
oxide ($\text{Li}_{2.8}\text{Ni}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-30-1P, Copper lithium
metaphosphate oxide ($\text{Cu}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-31-2P, Lithium
zirconium metaphosphate oxide ($\text{Li}_{2.8}\text{Zr}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-32-3P,
Lithium niobium metaphosphate oxide ($\text{Li}_{2.8}\text{Nb}_{0.2}(\text{PO}_3)\text{O}_{0.9}$)
782495-33-4P, Lithium molybdenum metaphosphate oxide
($\text{Li}_{2.8}\text{Mo}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-34-5P, Lithium ruthenium metaphosphate
oxide ($\text{Li}_{2.8}\text{Ru}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-35-6P, Lithium silver metaphosphate
oxide ($\text{Li}_{2.8}\text{Ag}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-36-7P, Lithium tantalum
metaphosphate oxide ($\text{Li}_{2.8}\text{Ta}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-37-8P, Lithium
tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-38-9P, Lithium
platinum metaphosphate oxide ($\text{Li}_{2.8}\text{Pt}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-39-0P, Gold
lithium metaphosphate oxide ($\text{Au}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-41-4P,
Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.01}(\text{PO}_3)\text{O}_{0.9}$)
782495-42-5P, Lithium tungsten metaphosphate oxide
($\text{Li}_{2.8}\text{W}_{0.05}(\text{PO}_3)\text{O}_{0.9}$) 782495-43-6P, Lithium tungsten
metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) 782495-44-7P, Lithium
tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.5}(\text{PO}_3)\text{O}_{0.9}$) 782495-47-0P, Lithium
vanadium oxide phosphate ($\text{Li}_{2.8}\text{V}_{0.2}\text{O}_{0.4}(\text{PO}_4)$) 782495-48-1P, Chromium
lithium oxide phosphate ($\text{Cr}_{0.2}\text{Li}_{2.8}\text{O}_{0.2}(\text{PO}_4)$) 782495-49-2P, Lithium
manganese oxide phosphate ($\text{Li}_{2.8}\text{Mn}_{0.2}\text{O}_{0.3}(\text{PO}_4)$) 782495-50-5P, Iron
lithium oxide phosphate ($\text{Fe}_{0.2}\text{Li}_{2.8}\text{O}_{0.17}(\text{PO}_4)$) 782495-51-6P, Cobalt
lithium oxide phosphate ($\text{Co}_{0.2}\text{Li}_{2.8}\text{O}_{0.17}(\text{PO}_4)$) 782495-52-7P, Lithium
nickel oxide phosphate ($\text{Li}_{2.8}\text{Ni}_{0.2}\text{O}_{0.1}(\text{PO}_4)$) 782495-53-8P,
Copper lithium oxide phosphate ($\text{Cu}_{0.2}\text{Li}_{2.8}\text{O}_{0.1}(\text{PO}_4)$) 782495-54-9P
, Lithium zirconium oxide phosphate ($\text{Li}_{2.8}\text{Zr}_{0.2}\text{O}_{0.3}(\text{PO}_4)$) 782495-55-0P,
Lithium niobium oxide phosphate ($\text{Li}_{2.8}\text{Nb}_{0.2}\text{O}_{0.4}(\text{PO}_4)$) 782495-56-1P
, Lithium molybdenum oxide phosphate ($\text{Li}_{2.8}\text{Mo}_{0.2}\text{O}_{0.5}(\text{PO}_4)$) 782495-57-2P,
Lithium silver phosphate ($\text{Li}_{2.8}\text{Ag}_{0.2}(\text{PO}_4)$) 782495-58-3P, Lithium
tantalum oxide phosphate ($\text{Li}_{2.8}\text{Ta}_{0.2}\text{O}_{0.4}(\text{PO}_4)$) 782495-59-4P,
Lithium tungsten oxide phosphate ($\text{Li}_{2.8}\text{W}_{0.2}\text{O}_{0.5}(\text{PO}_4)$) 782495-60-7P
, Lithium titanium oxide phosphate ($\text{Li}_4\text{Ti}_{0.25}\text{O}(\text{PO}_4)$) 782495-61-8P,
Lithium vanadium oxide phosphate ($\text{Li}_3.75\text{V}_{0.25}\text{O}(\text{PO}_4)$) 782495-62-9P,
Chromium lithium oxide phosphate ($\text{Cr}_{0.25}\text{Li}_{3.5}\text{O}(\text{PO}_4)$) 782495-63-0P,
Lithium manganese oxide phosphate ($\text{Li}_{3.25}\text{Mn}_{0.25}\text{O}(\text{PO}_4)$) 782495-64-1P,
Lithium niobium oxide phosphate ($\text{Li}_{3.75}\text{Nb}_{0.25}\text{O}(\text{PO}_4)$) 782495-65-2P
, Lithium molybdenum oxide phosphate ($\text{Li}_{3.5}\text{Mo}_{0.25}\text{O}(\text{PO}_4)$)
782495-66-3P, Lithium tantalum oxide phosphate

(Li₃.75Ta_{0.25}O(PO₄)) 782495-67-4P, Lithium tungsten oxide phosphate (Li₃.5W_{0.25}O(PO₄)) 782495-69-6P, Lithium tungsten oxide phosphate (Li₃.02W_{0.01}O_{0.04}(PO₄)) 782495-70-9P, Lithium tungsten oxide phosphate (Li₃.2W_{0.10}O_{0.4}(PO₄)) 782495-72-1P, Lithium tungsten oxide phosphate (Li₃.66W_{0.33}O_{1.32}(PO₄)) 782495-74-3P, Lithium tungsten oxide phosphate (Li₅W_{0.4}(PO₄)) 782495-76-5P, Lithium tungsten oxide phosphate (Li₇W₂O₈(PO₄)) 816415-85-7P, Boron lithium nitride oxide (BLi_{0.8}N_{0.3}O_{1.45}) 816416-34-9P, Germanium lithium nitride oxide (GeLi_{1.8}N_{0.3}O_{2.45}) 816416-38-3P, Aluminum lithium nitride oxide (ALi_{0.8}N_{0.3}O_{1.45}) 816416-40-7P, Aluminum lithium nitride oxide (ALi_{4.8}N_{0.3}O_{3.45}) 816416-44-1P, Gallium lithium nitride oxide (GaLi_{0.8}N_{0.3}O_{1.45}) 816416-46-3P, Lithium sulfur nitride oxide (Li_{1.8}S_N_{0.3}O_{3.45}) 816416-50-9P, Boron lithium nitride oxide silicate (B_{0.5}Li_{2.3}N_{0.3}O_{0.45}(SiO₄)_{0.5}) 816416-52-1P, Germanium lithium nitride oxide silicate (Ge_{0.5}Li_{3.8}N_{0.3}O_{1.45}(SiO₄)_{0.5}) 816416-54-3P, Carbon lithium nitride oxide silicate (C_{0.5}Li_{2.8}N_{0.3}O_{2.95}(SiO₄)_{0.5}) 816416-56-5P, Lithium silicon nitride oxide sulfate (Li_{2.8}Si_{0.5}N_{0.3}O_{1.45}(SO₄)_{0.5}) 816416-58-7P, Germanium lithium borate nitride oxide (Ge_{0.5}Li_{2.3}(BO₃)_{0.5}N_{0.3}O_{0.95}) 816416-60-1P, Aluminum lithium borate nitride oxide (Al_{0.5}Li_{2.8}(BO₃)_{0.5}N_{0.3}O_{0.95}) 816416-62-3P, Boron lithium carbonate nitride oxide (B_{0.5}Li_{1.3}(CO₃)_{0.5}N_{0.3}O_{0.45}) 816416-64-5P, Gallium lithium borate nitride oxide (Ga_{0.5}Li_{0.8}(BO₂)_{0.5}N_{0.3}O_{0.45}) 816416-66-7P, Boron lithium nitride oxide sulfate (B_{0.5}Li_{1.3}N_{0.3}O_{0.45}(SO₄)_{0.5}) 816416-68-9P 816416-70-3P, Germanium lithium nitride oxide sulfate (Ge_{0.5}Li_{2.8}N_{0.3}O_{1.45}(SO₄)_{0.5}) 816416-72-5P, Aluminum gallium lithium nitride oxide (Al_{0.5}Ga_{0.5}Li_{2.8}N_{0.3}O_{2.45}) 816416-74-7P, Carbon lithium nitride oxide sulfate (C_{0.5}Li_{1.8}N_{0.3}O_{0.95}(SO₄)_{0.5}) 882681-95-0P, Lithium titanium oxide phosphate (Li_{2.8}Ti_{0.2}O_{0.3}(PO₄)) 882682-19-1P, Lithium zirconium oxide phosphate (Li₄Zr_{0.25}O(PO₄)) 882682-64-6P, Lithium silicon nitride oxide (Li_{1.8}Si_N_{0.5}O_{2.15}) 884739-67-7P, Lithium silicon nitride oxide (Li_{1.8}Si_N_{0.3}O_{2.45}) 885122-24-7P, Aluminum lithium nitride oxide (ALi_{1.8}N_{0.3}O_{2.45})

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(anodes; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

IT 12190-79-3, Lithium cobaltate (LiCoO₂)

RL: DEV (Device component use); USES (Uses)

(cathode active mass; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

IT 11109-50-5, SUS 304

RL: DEV (Device component use); USES (Uses)

(copper-deposited, anode substrates; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

IT 7439-93-2, Lithium, uses

RL: DEV (Device component use); USES (Uses)

(precipitated, anode components; manufacture of lithium secondary batteries having wet-stable oxide or nitride-based ionic conductors)

AB The anodes consist of Li-precipitating conductive substrates and Li ion-conductive layers represented by Lx₁PTy₁Oz₁ or Lx₂MOy₂Nz₂ [T = Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zr, Nb, Mo, Ru, Ag, Ta, W, Pt, and/or Au; 2.0 ≤ x₁ ≤ 7.0; 0.01 ≤ y₁ ≤ 1.0; 3.5 ≤ z₁ ≤ 8.0; M = Si, B, Ge, Al, C, Ga, and/or S; plural range sets of (x₂, y₂, z₂) are given] and being formed on the substrate surface. Lithium secondary batteries employing the anodes suppress rise in anode impedance and show long cycle life.

ACCESSION NUMBER: 2006:384961 CAPLUS
 DOCUMENT NUMBER: 144:436091
 TITLE: Lithium battery anode with inorg.
 compound. layer formed on active material layer
 INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji
 PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
 SOURCE: PCT Int. Appl., 32 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006043470	A1	20060427	WO 2005-JP18917	20051014
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1677375	A1	20060705	EP 2005-793190	20051014
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
CN 1860628	A	20061108	CN 2005-80001076	20051014
CN 100454613	C	20090121		
KR 2006085625	A	20060727	KR 2006-706328	20060331
US 20070020520	A1	20070125	US 2006-575889	20060414
PRIORITY APPLN. INFO.: JP 2004-306649 A 20041021 WO 2005-JP18917 W 20051014				
TI	Lithium battery anode with inorg. compound. layer formed on active material layer			
IT	Battery anodes (lithium battery anode; lithium battery anode with inorg. compound. layer formed on active material layer)			
IT	7440-21-3, Silicon, uses 7440-31-5, Tin, uses 7631-86-9, Silica, uses 12039-83-7, Titanium silicide (TiSi ₂) 12202-01-6 RL: TEM (Technical or engineered material use); USES (Uses) (anode-active material for lithium battery)			
IT	782495-53-8, Copper lithium oxide phosphate (Cu _{0.2} Li _{2.8} O _{0.1} (PO ₄)) 782495-54-9, Lithium zirconium oxide phosphate (Li _{2.8} Zr _{0.2} O _{0.3} (PO ₄)) 782495-56-1, Lithium molybdenum oxide phosphate (Li _{2.8} Mo _{0.2} O _{0.5} (PO ₄)) 782495-58-3, Lithium tantalum oxide phosphate (Li _{2.8} Ta _{0.2} O _{0.4} (PO ₄)) 782495-59-4, Lithium tungsten oxide phosphate (Li _{2.8} W _{0.2} O _{0.5} (PO ₄)) 782495-60-7, Lithium titanium oxide phosphate (Li ₄ Ti _{0.25} O _{0.25} (PO ₄)) 782495-65-2, Lithium molybdenum oxide phosphate (Li _{3.5} Mo _{0.25} O _{0.25} (PO ₄)) 782495-66-3, Lithium tantalum oxide phosphate (Li _{3.75} Ta _{0.25} O _{0.25} (PO ₄)) 782495-67-4, Lithium tungsten oxide phosphate (Li _{3.5} W _{0.25} O _{0.25} (PO ₄)) 782495-69-6, Lithium tungsten oxide phosphate (Li _{3.02} W _{0.01} O _{0.04} (PO ₄)) 782495-70-9, Lithium tungsten oxide phosphate (Li _{3.2} W _{0.1} O _{0.4} (PO ₄)) 782495-72-1, Lithium tungsten			

oxide phosphate (Li3.66W0.33O1.32(PO4)) 782495-74-3, Lithium tungsten oxide phosphate (Li5WO4(PO4)) 782495-76-5, Lithium tungsten oxide phosphate (Li7W2O8(PO4)) 816415-85-7, Boron lithium nitride oxide (BLi0.8N0.3O1.45) 816416-34-9, Germanium lithium nitride oxide (GeLi1.8N0.3O2.45) 816416-38-3, Aluminum lithium nitride oxide (ALi0.8N0.3O1.45) 816416-40-7, Aluminum lithium nitride oxide (ALLi4.8N0.3O3.45) 816416-42-9, Carbon lithium nitride oxide (CLi1.8N0.3O2.45) 816416-44-1, Gallium lithium nitride oxide (GaLi0.8N0.3O1.45) 816416-46-3, Lithium sulfur nitride oxide (Li1.8SN0.3O3.45) 816416-50-9, Boron lithium nitride oxide silicate (B0.5Li2.3N0.3O0.45(SiO4)0.5) 816416-52-1, Germanium lithium nitride oxide silicate (Ge0.5Li3.8N0.3O1.45(SiO4)0.5) 816416-54-3, Carbon lithium nitride oxide silicate (C0.5Li2.8N0.3O2.95(SiO4)0.5) 816416-56-5, Lithium silicon nitride oxide sulfate (Li2.8Si0.5N0.3O1.45(SO4)0.5) 816416-58-7, Germanium lithium borate nitride oxide (Ge0.5Li2.3(BO3)0.5N0.3O0.95) 816416-60-1, Aluminum lithium borate nitride oxide (Al0.5Li2.8(BO3)0.5N0.3O0.95) 816416-62-3, Boron lithium carbonate nitride oxide (B0.5Li1.3(CO3)0.5N0.3O0.45) 816416-64-5, Gallium lithium borate nitride oxide (Ga0.5Li0.8(BO2)0.5N0.3O0.45) 816416-66-7, Boron lithium nitride oxide sulfate (B0.5Li1.3N0.3O0.45(SO4)0.5) 816416-68-9 816416-70-3, Germanium lithium nitride oxide sulfate (Ge0.5Li2.8N0.3O1.45(SO4)0.5) 816416-74-7, Carbon lithium nitride oxide sulfate (C0.5Li1.8N0.3O0.95(SO4)0.5) 882681-95-0, Lithium titanium oxide phosphate (Li2.8Ti0.2O0.3(PO4)) 882682-19-1, Lithium zirconium oxide phosphate (Li4Zr0.25O(PO4)) 882682-64-6, Lithium silicon nitride oxide (Li1.8SiN0.5O2.15) 884739-67-7, Lithium silicon nitride oxide (Li1.8SiN0.3O2.45)

RL: TEM (Technical or engineered material use); USES (Uses)

(inorg. compound. layer for lithium battery)

AB Disclosed is a neg. electrode for batteries which comprises a collector, an active material layer and an inorg. compound. layer. The active material layer is formed on the collector, and the inorg. compound. layer is formed on the surface of the active material layer. The general formula of the inorg. compound. layer is expressed as LixPTyOz or LixMOyNz. The compound. constituting the inorg. compound. layer has lithium ion conductivity and excellent moisture resistance.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:357059 CAPLUS

DOCUMENT NUMBER: 144:415885

TITLE: Secondary bipolar lithium battery, its manufacture, group battery, and vehicle

INVENTOR(S): Hisamitsu, Yasunari; Osawa, Yasuhiko; Nemoto, Koichi

PATENT ASSIGNEE(S): Nissan Motor Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006107963	A	20060420	JP 2004-294185	20041006
PRIORITY APPLN. INFO.:			JP 2004-294185	20041006

TI Secondary bipolar lithium battery, its manufacture, group battery, and vehicle

IT Secondary batteries

(lithium; structure and manufacture of anodes containing

Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

IT Battery anodes
Vehicles
(structure and manufacture of anodes containing Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

IT Carbon fibers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(structure and manufacture of anodes containing Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(hard; structure and manufacture of anodes containing Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

IT 12057-17-9, Lithium manganese oxide (LiMn2O4)
RL: DEV (Device component use); USES (Uses)
(structure and manufacture of anodes containing Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

IT 1344-28-1, Alumina, uses 227196-95-4, Indium lithium zirconium phosphate (In_{1.8}Li_{2.8}Zr_{0.2}(PO₄)₃)
RL: MOA (Modifier or additive use); USES (Uses)
(structure and manufacture of anodes containing Li+-conductive inorg. solid electrolytes and conductive fibers for secondary bipolar lithium batteries)

AB The battery has a coating layer containing Li+-conductive inorg. solid electrolyte and conductive fibers on a cathode active mass and/or an anode active mass; and is manufactured by mech. depositing or bonding a coating material containing the solid electrolyte and the conductive fibers on electrode active mass particles. The group battery has several above bipolar batteries connected in parallel, in series, in series-parallel, or in parallel-series. The vehicle uses the above group battery.

L4 ANSWER 11 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:340654 CAPLUS

DOCUMENT NUMBER: 144:394643

TITLE: Lithium anode with lithium mixed oxide protective coating for secondary lithium battery

INVENTOR(S): Ukaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2006100083	A	20060413	JP 2004-283846	20040929
PRIORITY APPLN. INFO.:			JP 2004-283846	20040929

TI Lithium anode with lithium mixed oxide protective coating for secondary lithium battery

IT Battery anodes
(anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li

battery)

IT Coating materials
(water-resistant; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

IT Lithium alloy, base
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(anode base; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(anode base; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

IT 10377-52-3, Lithium phosphate (Li_3PO_4) 14332-24-2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(pretreatment coating; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

IT 782495-37-8, Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.2}(\text{PO}_3)\text{O}_{0.9}$)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(protective coating, pretreatment coating; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

IT 782495-23-2, Lithium titanium metaphosphate oxide ($\text{Li}_{2.8}\text{Ti}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-24-3, Lithium vanadium metaphosphate oxide ($\text{Li}_{2.8}\text{V}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-25-4, Chromium lithium metaphosphate oxide ($\text{Cr}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-26-5, Lithium manganese metaphosphate oxide ($\text{Li}_{2.8}\text{Mn}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-27-6, Iron lithium metaphosphate oxide ($\text{Fe}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-28-7, Cobalt lithium metaphosphate oxide ($\text{Co}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-29-8, Lithium nickel metaphosphate oxide ($\text{Li}_{2.8}\text{Ni}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-30-1, Copper lithium metaphosphate oxide ($\text{Cu}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-31-2, Lithium zirconium metaphosphate oxide ($\text{Li}_{2.8}\text{Zr}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-32-3, Lithium niobium metaphosphate oxide ($\text{Li}_{2.8}\text{Nb}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-33-4, Lithium molybdenum metaphosphate oxide ($\text{Li}_{2.8}\text{Mo}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-34-5, Lithium ruthenium metaphosphate oxide ($\text{Li}_{2.8}\text{Ru}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-35-6, Lithium silver metaphosphate oxide ($\text{Li}_{2.8}\text{Ag}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-36-7, Lithium tantalum metaphosphate oxide ($\text{Li}_{2.8}\text{Ta}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-38-9, Lithium platinum metaphosphate oxide ($\text{Li}_{2.8}\text{Pt}_{0.2}(\text{PO}_3)\text{O}_{0.9}$) 782495-39-0, Gold lithium metaphosphate oxide ($\text{Au}_{0.2}\text{Li}_{2.8}(\text{PO}_3)\text{O}_{0.9}$) 782495-41-4, Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.01}(\text{PO}_3)\text{O}_{0.9}$) 782495-42-5, Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.05}(\text{PO}_3)\text{O}_{0.9}$) 782495-43-6, Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.1}(\text{PO}_3)\text{O}_{0.9}$) 782495-44-7, Lithium tungsten metaphosphate oxide ($\text{Li}_{2.8}\text{W}_{0.5}(\text{PO}_3)\text{O}_{0.9}$) 782495-47-0, Lithium vanadium oxide phosphate ($\text{Li}_{2.8}\text{V}_{0.2}\text{O}_{0.4}(\text{PO}_4)$) 782495-48-1, Chromium lithium oxide phosphate ($\text{Cr}_{0.2}\text{Li}_{2.8}\text{O}_{0.2}(\text{PO}_4)$) 782495-49-2, Lithium manganese oxide phosphate ($\text{Li}_{2.8}\text{Mn}_{0.2}\text{O}_{0.3}(\text{PO}_4)$) 782495-50-5, Iron lithium oxide phosphate ($\text{Fe}_{0.2}\text{Li}_{2.8}\text{O}_{0.17}(\text{PO}_4)$) 782495-51-6, Cobalt lithium oxide phosphate ($\text{Co}_{0.2}\text{Li}_{2.8}\text{O}_{0.17}(\text{PO}_4)$) 782495-52-7, Lithium nickel oxide phosphate ($\text{Li}_{2.8}\text{Ni}_{0.2}\text{O}_{0.1}(\text{PO}_4)$) 782495-53-8, Copper lithium oxide phosphate ($\text{Cu}_{0.2}\text{Li}_{2.8}\text{O}_{0.1}(\text{PO}_4)$) 782495-54-9, Lithium zirconium oxide phosphate ($\text{Li}_{2.8}\text{Zr}_{0.2}\text{O}_{0.3}(\text{PO}_4)$) 782495-55-0, Lithium niobium oxide phosphate ($\text{Li}_{2.8}\text{Nb}_{0.2}\text{O}_{0.4}(\text{PO}_4)$) 782495-56-1, Lithium molybdenum

oxide phosphate ($\text{Li}_2.8\text{Mo}_0.2\text{O}_0.5(\text{PO}_4)$) 782495-57-2, Lithium silver phosphate ($\text{Li}_2.8\text{Ag}_0.2(\text{PO}_4)$) 782495-58-3, Lithium tantalum oxide phosphate ($\text{Li}_2.8\text{Ta}_0.2\text{O}_0.4(\text{PO}_4)$) 782495-59-4, Lithium tungsten oxide phosphate ($\text{Li}_2.8\text{W}_0.2\text{O}_0.5(\text{PO}_4)$) 782495-60-7, Lithium titanium oxide phosphate ($\text{Li}_4\text{Ti}_0.25\text{O}(\text{PO}_4)$) 782495-61-8, Lithium vanadium oxide phosphate ($\text{Li}_3.75\text{V}_0.25\text{O}(\text{PO}_4)$) 782495-62-9, Chromium lithium oxide phosphate ($\text{Cr}_0.25\text{Li}_3.5\text{O}(\text{PO}_4)$) 782495-63-0, Lithium manganese oxide phosphate ($\text{Li}_3.25\text{Mn}_0.25\text{O}(\text{PO}_4)$) 782495-64-1, Lithium niobium oxide phosphate ($\text{Li}_3.75\text{Nb}_0.25\text{O}(\text{PO}_4)$) 782495-65-2, Lithium molybdenum oxide phosphate ($\text{Li}_3.5\text{Mo}_0.25\text{O}(\text{PO}_4)$) 782495-66-3, Lithium tantalum oxide phosphate ($\text{Li}_3.75\text{Ta}_0.25\text{O}(\text{PO}_4)$) 782495-67-4, Lithium tungsten oxide phosphate ($\text{Li}_3.5\text{W}_0.25\text{O}(\text{PO}_4)$) 782495-69-6, Lithium tungsten oxide phosphate ($\text{Li}_3.02\text{W}_0.01\text{O}_0.04(\text{PO}_4)$) 782495-70-9, Lithium tungsten oxide phosphate ($\text{Li}_3.2\text{W}_0.1\text{O}_0.4(\text{PO}_4)$) 782495-72-1, Lithium tungsten oxide phosphate ($\text{Li}_3.66\text{W}_0.33\text{O}_1.32(\text{PO}_4)$) 782495-74-3, Lithium tungsten oxide phosphate ($\text{Li}_5\text{W}_0.4(\text{PO}_4)$) 816415-85-7, Boron lithium nitride oxide ($\text{BLi}_0.8\text{N}_0.3\text{O}_1.45$) 816416-34-9, Germanium lithium nitride oxide ($\text{GeLi}_1.8\text{N}_0.3\text{O}_2.45$) 816416-38-3, Aluminum lithium nitride oxide ($\text{ALi}_0.8\text{N}_0.3\text{O}_1.45$) 816416-40-7, Aluminum lithium nitride oxide ($\text{ALLi}_4.8\text{N}_0.3\text{O}_3.45$) 816416-42-9, Carbon lithium nitride oxide ($\text{CLi}_1.8\text{N}_0.3\text{O}_2.45$) 816416-44-1, Gallium lithium nitride oxide ($\text{GaLi}_0.8\text{N}_0.3\text{O}_1.45$) 816416-46-3, Lithium sulfur nitride oxide ($\text{Li}_1.8\text{SN}_0.3\text{O}_3.45$) 816416-50-9, Boron lithium nitride oxide silicate ($\text{B}_0.5\text{Li}_2.3\text{N}_0.3\text{O}_0.45(\text{SiO}_4)_0.5$) 816416-52-1, Germanium lithium nitride oxide silicate ($\text{Ge}_0.5\text{Li}_3.8\text{N}_0.3\text{O}_1.45(\text{SiO}_4)_0.5$) 816416-54-3, Carbon lithium nitride oxide silicate ($\text{C}_0.5\text{Li}_2.8\text{N}_0.3\text{O}_2.95(\text{SiO}_4)_0.5$) 816416-56-5, Lithium silicon nitride oxide sulfate ($\text{Li}_2.8\text{Si}_0.5\text{N}_0.3\text{O}_1.45(\text{SO}_4)_0.5$) 816416-58-7, Germanium lithium borate nitride oxide ($\text{Ge}_0.5\text{Li}_2.3(\text{BO}_3)_0.5\text{N}_0.3\text{O}_0.95$) 816416-60-1, Aluminum lithium borate nitride oxide ($\text{Al}_0.5\text{Li}_2.8(\text{BO}_3)_0.5\text{N}_0.3\text{O}_0.95$) 816416-62-3, Boron lithium carbonate nitride oxide ($\text{B}_0.5\text{Li}_1.3(\text{CO}_3)_0.5\text{N}_0.3\text{O}_0.45$) 816416-64-5, Gallium lithium borate nitride oxide ($\text{Ga}_0.5\text{Li}_0.8(\text{BO}_2)_0.5\text{N}_0.3\text{O}_0.45$) 816416-66-7, Boron lithium nitride oxide sulfate ($\text{B}_0.5\text{Li}_1.3\text{N}_0.3\text{O}_0.45(\text{SO}_4)_0.5$) 816416-68-9 816416-70-3, Germanium lithium nitride oxide sulfate ($\text{Ge}_0.5\text{Li}_2.8\text{N}_0.3\text{O}_1.45(\text{SO}_4)_0.5$) 816416-74-7, Carbon lithium nitride oxide sulfate ($\text{C}_0.5\text{Li}_1.8\text{N}_0.3\text{O}_0.95(\text{SO}_4)_0.5$) 882681-95-0, Lithium titanium oxide phosphate ($\text{Li}_2.8\text{Ti}_0.2\text{O}_0.3(\text{PO}_4)$) 882682-19-1, Lithium zirconium oxide phosphate ($\text{Li}_4\text{Zr}_0.25\text{O}(\text{PO}_4)$) 882682-60-2, Aluminum gallium lithium nitride oxide ($\text{Al}_0.5\text{Ga}_0.5\text{Li}_2.8\text{N}_0.3\text{O}_3.45$) 882682-64-6, Lithium silicon nitride oxide ($\text{Li}_1.8\text{SiN}_0.5\text{O}_2.15$) 884739-67-7, Lithium silicon nitride oxide ($\text{Li}_1.8\text{SiN}_0.3\text{O}_2.45$)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(protective coating; anode having lithium mixed oxide protective coating with high water resistance and ion conductivity on pretreatment coating for Li battery)

- AB The anode comprises a Li or a Li alloy anode coated with (1) a pretreatment layer containing a Li ion conductive substance and (2) a protective layer comprising Li_xPTyO_z ($\text{T} = \text{Ti}, \text{V}, \text{Cr}, \text{Mn}, \text{Fe}, \text{Co}, \text{Ni}, \text{Cu}, \text{Zr}, \text{Nb}, \text{Mo}, \text{Ru}, \text{Ag}, \text{Ta}, \text{W}, \text{Pt}, \text{and/or Au}$; $x = 2.0-7.0$; $y = 0.01-1.0$; $z = 3.5-8.0$) or $\text{Li}_x\text{MO}_y\text{N}_z$ [$\text{M} = \text{Si}, \text{B}, \text{Ge}, \text{Al}, \text{C}, \text{Ga}, \text{and/or S}$; (a) $x = 0.6-1.0$, $y = 1.05-1.99$, $z = 0.01-0.5$, (b) $x = 1.6-2.0$, $y = 2.05-2.99$, $z = 0.01-0.5$, (c) $x = 1.6-2.0$, $y = 3.05-3.99$, $z = 0.01-0.5$, or (d) $x = 4.6-5.0$, $y = 3.05-3.99$, $z = 0.01-0.5$]. Secondary lithium battery equipped with the anode is also claimed. Since the protective layer has high stability to water and ion conductivity, deterioration of the anode is prevented, and the battery has excellent cycling performance.

DOCUMENT NUMBER: 144:216095
 TITLE: Lithium secondary batteries with enhanced safety and performance
 INVENTOR(S): Yong, Hyun-Hang; Lee, Sang-Young; Kim, Seok-Koo; Ahn, Soon-Ho; Suk, Jung-Don
 PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea
 SOURCE: PCT Int. Appl., 19 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006019245	A1	20060223	WO 2005-KR2666	20050816
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
CA 2574628	A1	20060223	CA 2005-2574628	20050816
CN 1930706	A	20070314	CN 2005-80007216	20050816
EP 1782493	A1	20070509	EP 2005-780529	20050816
R: DE, FR				
BR 2005008130	A	20070717	BR 2005-8130	20050816
JP 2007527603	T	20070927	JP 2007-502739	20050816
RU 2321924	C1	20080410	RU 2006-130367	20050816
KR 2006050508	A	20060519	KR 2005-75105	20050817
KR 805005	B1	20080220		
IN 2007KN00018	A	20070629	IN 2007-KN18	20070102
US 20080131781	A1	20080605	US 2007-573317	20070206
PRIORITY APPLN. INFO.:			KR 2004-64673	A 20040817
			WO 2005-KR2666	W 20050816
TI	Lithium secondary batteries with enhanced safety and performance			
IT	Phosphate glasses			
	RL: MOA (Modifier or additive use); USES (Uses) (aluminum lithium titanium phosphate; lithium secondary batteries with enhanced safety and performance)			
IT	Phosphate glasses			
	RL: MOA (Modifier or additive use); USES (Uses) (germanium lithium thiophosphate; lithium secondary batteries with enhanced safety and performance)			
IT	Particles			
	(inorg.; lithium secondary batteries with enhanced safety and performance)			
IT	Battery electrodes			
	Safety (lithium secondary batteries with enhanced safety and performance)			
IT	Secondary batteries			
	(lithium; lithium secondary batteries with enhanced safety and performance)			
IT	Sulfide glasses			
	RL: MOA (Modifier or additive use); USES (Uses)			

(silicon sulfide; lithium secondary batteries with enhanced safety and performance)

IT 12190-79-3, Cobalt lithium oxide (CoLiO₂)
 RL: DEV (Device component use); USES (Uses)
 (lithium secondary batteries with enhanced safety and performance)

IT 1314-80-3, Phosphorus pentasulfide 10377-52-3, Lithium phosphate
 13759-10-9, Silicon sulfide (SiS₂) 30622-39-0, Lithium titanium
 phosphate Li₂(PO₄)₃ 862809-42-5, Lithium titanium phosphate
 (Li_{0.2}Ti_{0.3}(PO₄)₃) 862809-44-7, Aluminum lithium titanium
 phosphate (Al_{0.1}Li_{0.2}Ti_{0.3}(PO₄)₃) 862809-46-9, Lanthanum lithium
 titanium oxide (La_{0.3}Li_{0.2}TiO₃) 862809-50-5, Lithium nitride (Li_{0.4}N_{0.2})
 RL: MOA (Modifier or additive use); USES (Uses)
 (lithium secondary batteries with enhanced safety and performance)

AB Disclosed is an electrode obtained from electrode slurry comprising: (a) an electrode active material capable of lithium intercalation/deintercalation; and (b) inorg. particles having lithium ion conductivity. An electrochem. device comprising the same electrode is also disclosed. The electrochem. device, using such inorg. particles having lithium ion conductivity added to electrode slurry, can show improved safety, while minimizing degradation in the quality caused by the use of additives.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:823981 CAPLUS

DOCUMENT NUMBER: 143:232673

TITLE: Electrochemical device comprising organic/inorganic composite porous layer-coated electrode

INVENTOR(S): Yong, Hyun-Hang; Lee, Sang-Young; Kim, Seok-Koo; Ahn, Soon-Ho

PATENT ASSIGNEE(S): LG Chem, Ltd., S. Korea

SOURCE: PCT Int. Appl., 53 pp.
 CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005076388	A1	20050818	WO 2005-KR358	20050205
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
KR 2006041649	A	20060512	KR 2005-9992	20050203
US 20050266150	A1	20051201	US 2005-51610	20050204
TW 253199	B	20060411	TW 2005-94103791	20050204
CA 2555747	A1	20050818	CA 2005-2555747	20050205
EP 1721348	A1	20061115	EP 2005-710859	20050205
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			

CN 1918727	A	20070221	CN 2005-80004235	20050205
BR 2005006636	A	20070508	BR 2005-6636	20050205
JP 2007520867	T	20070726	JP 2006-552057	20050205
RU 2326468	C1	20080610	RU 2006-129310	20050205
IN 2006KN02374	A	20070525	IN 2006-KN2374	20060822
PRIORITY APPLN. INFO.:			KR 2004-8136	A 20040207
			KR 2004-8585	A 20040210
			WO 2005-KR358	W 20050205
TI	Electrochemical device comprising organic/inorganic composite porous layer-coated electrode			
IT	Phosphate glasses			
	RL: MOA (Modifier or additive use); USES (Uses)			
	(aluminum lithium titanium; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Porous materials			
	(coatings; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Battery anodes			
	Battery cathodes			
	Battery electrodes			
	Dielectric constant			
	Safety			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Oxides (inorganic), uses			
	Petroleum coke			
	RL: DEV (Device component use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Fluoropolymers, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Gelatin, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Polymers, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Polyoxyalkylenes, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Secondary batteries			
	(lithium; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Secondary battery separators			
	(microporous, polymeric; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Sulfide glasses			
	RL: MOA (Modifier or additive use); USES (Uses)			
	(phosphorus sulfide and silicon sulfide; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Coating materials			
	(porous; electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			
IT	Lithium alloy, base			
	RL: DEV (Device component use); USES (Uses)			
	(electrochem. device comprising organic/inorg. composite porous layer-coated electrode)			

- IT 236388-73-1, Lithium silicide sulfide 862809-52-7, Lithium phosphorus sulfide (LiO-3P0-3S0-7)
 RL: DEV (Device component use); USES (Uses)
 (electrochem. device comprising organic/inorg. composite porous layer-coated electrode)
- IT 10377-52-3, Lithium phosphate 30622-39-0, Lithium titanium phosphate (LiTi2(PO4)3) 862809-42-5, Lithium titanium phosphate (LiO-2TiO-3(PO4)3) 862809-44-7, Aluminum lithium titanium phosphate (AlO-1LiO-2TiO-3(PO4)3) 862809-46-9, Lanthanum lithium titanium oxide (LaO-3LiO-2TiO3) 862809-48-1, Germanium lithium phosphorus sulfide (GeO-1LiO-4P0-1S0-5) 862809-50-5, Lithium nitride (LiO-4N0-2)
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrochem. device comprising organic/inorg. composite porous layer-coated electrode)
- IT 57-50-1D, Sucrose, cyanoethyl ethers 109-78-4D, 2-Cyanoethanol, sucrose ethers 110-71-4, Glyme 1305-78-8, Calcia, uses 1306-38-3, Ceria, uses 1309-48-4, Magnesia, uses 1313-99-1, Nickel oxide (NiO), uses 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconia, uses 1314-36-9, Yttria, uses 1344-28-1, Alumina, uses 9000-11-7, Carboxymethyl cellulose 9002-86-2, Polyvinyl chloride 9003-20-7, Polyvinyl acetate 9003-39-8, Polyvinylpyrrolidone 9003-54-7, Acrylonitrile-styrene copolymer 9004-35-7, Cellulose acetate 9004-36-8, Cellulose acetate butyrate 9004-39-1, Cellulose acetate propionate 9004-41-5, Cyanoethyl cellulose 9011-14-7, PMMA 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 9057-02-7, Pullulan 12047-27-7, Barium titanium oxide (BaTiO3), uses 12055-23-1, Hafnia 12060-59-2, Strontium titanium oxide (SrTiO3) 12626-81-2, PZT 12676-60-7, PLZT 13463-67-7, Titania, uses 18282-10-5, Tin dioxide 24937-78-8, Ethylene-vinyl acetate copolymer 24937-79-9, PVDF 24991-55-7, Polyethylene glycol dimethyl ether 25014-41-9, Polyacrylonitrile 25322-68-3 37452-25-8, Polyvinyl alcohol cyanoethyl ether 77466-56-9, Cyanoethylpullulan 87465-25-6, Trichloroethylene-vinylidene fluoride copolymer 430434-54-1, PMN-PT
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrochem. device comprising organic/inorg. composite porous layer-coated electrode)
- AB Disclosed is an electrode comprising a first organic/inorg. composite porous coating layer formed on its surface, wherein the first coating layer includes inorg. particles and a binder polymer for interconnecting and fixing the inorg. particles, and has micropores formed by interstitial vols. among the inorg. particles. An electrochem. device including the same electrode is also disclosed. Further, disclosed is a method for manufacturing an electrode having an organic/inorg. composite porous coating layer on the surface thereof, comprising the steps of: (a) coating a current collector with slurry containing an electrode active material and drying it to provide an electrode; and (b) coating the surface of electrode obtained from step (a) with a mixture of inorg. particles with a binder polymer. A lithium secondary battery including the electrode shows improved safety and minimized degradation in battery performance.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:906086 CAPLUS

DOCUMENT NUMBER: 141:382165

TITLE: Solid electrolyte and total solid secondary battery containing the electrolyte

INVENTOR(S): Ugaji, Masaya; Mino, Shinji; Shibano, Yasuyuki; Ito, Shuji

PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: PCT Int. Appl., 41 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004093236	A1	20041028	WO 2004-JP5424	20040415
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004335455	A	20041125	JP 2004-119042	20040414
JP 3690684	B2	20050831		
EP 1630893	A1	20060301	EP 2004-727754	20040415
R: DE, FR, GB				
CN 1751409	A	20060322	CN 2004-80004511	20040415
CN 100337362	C	20070912		
US 20060216611	A1	20060928	US 2005-551935	20051004
US 7514181	B2	20090407		

PRIORITY APPLN. INFO.: JP 2003-113850 A 20030418
 WO 2004-JP5424 W 20040415

TI Solid electrolyte and total solid secondary battery containing the electrolyte

IT Battery electrolytes
 Secondary batteries
 (solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 782495-70-9, Lithium tungsten oxide phosphate (Li_{3.2}W_{0.100.4}(PO₄))
 782495-72-1, Lithium tungsten oxide phosphate (Li_{3.66}W_{0.3301.32}(PO₄))
 RL: DEV (Device component use); USES (Uses)
 (solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 782495-67-4, Lithium tungsten oxide phosphate (Li_{3.5}W_{0.250}(PO₄))
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

IT 12190-79-3, Cobalt lithium oxide (CoLiO₂) 782495-23-2, Lithium titanium metaphosphate oxide (Li_{2.8}Ti_{0.2}(PO₃)O_{0.9}) 782495-24-3, Lithium vanadium metaphosphate oxide (Li_{2.8}V_{0.2}(PO₃)O_{0.9}) 782495-25-4, Chromium lithium metaphosphate oxide (Cr_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-26-5, Lithium manganese metaphosphate oxide (Li_{2.8}Mn_{0.2}(PO₃)O_{0.9}) 782495-27-6, Iron lithium metaphosphate oxide (Fe_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-28-7, Cobalt lithium metaphosphate oxide (Co_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-29-8, Lithium nickel metaphosphate oxide (Li_{2.8}Ni_{0.2}(PO₃)O_{0.9}) 782495-30-1, Copper lithium metaphosphate oxide (Cu_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-31-2, Lithium zirconium metaphosphate oxide (Li_{2.8}Zr_{0.2}(PO₃)O_{0.9}) 782495-32-3, Lithium niobium metaphosphate oxide (Li_{2.8}Nb_{0.2}(PO₃)O_{0.9}) 782495-33-4, Lithium molybdenum metaphosphate oxide (Li_{2.8}Mo_{0.2}(PO₃)O_{0.9}) 782495-34-5, Lithium ruthenium metaphosphate oxide (Li_{2.8}Ru_{0.2}(PO₃)O_{0.9}) 782495-35-6, Lithium silver

metaphosphate oxide (Li_{2.8}Ag_{0.2}(PO₃)O_{0.9}) 782495-36-7, Lithium tantalum metaphosphate oxide (Li_{2.8}Ta_{0.2}(PO₃)O_{0.9}) 782495-37-8, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.2}(PO₃)O_{0.9}) 782495-38-9, Lithium platinum metaphosphate oxide (Li_{2.8}Pt_{0.2}(PO₃)O_{0.9}) 782495-39-0, Gold lithium metaphosphate oxide (Au_{0.2}Li_{2.8}(PO₃)O_{0.9}) 782495-40-3, Lithium metaphosphate oxide (Li_{2.8}(PO₃)O_{0.9}) 782495-41-4, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.01}(PO₃)O_{0.9}) 782495-42-5, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.05}(PO₃)O_{0.9}) 782495-43-6, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.1}(PO₃)O_{0.9}) 782495-44-7, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.5}(PO₃)O_{0.9}) 782495-45-8, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.52}(PO₃)O_{0.9}) 782495-46-9, Lithium tungsten metaphosphate oxide (Li_{2.8}W_{0.6}(PO₃)O_{0.9}) 782495-47-0, Lithium vanadium oxide phosphate (Li_{2.8}V_{0.2}O_{0.4}(PO₄)) 782495-48-1, Chromium lithium oxide phosphate (Cr_{0.2}Li_{2.8}O_{0.2}(PO₄)) 782495-49-2, Lithium manganese oxide phosphate (Li_{2.8}Mn_{0.2}O_{0.3}(PO₄)) 782495-50-5, Iron lithium oxide phosphate (Fe_{0.2}Li_{2.8}O_{0.17}(PO₄)) 782495-51-6, Cobalt lithium oxide phosphate (Co_{0.2}Li_{2.8}O_{0.17}(PO₄)) 782495-52-7, Lithium nickel oxide phosphate (Li_{2.8}Ni_{0.2}O_{0.1}(PO₄)) 782495-53-8, Copper lithium oxide phosphate (Cu_{0.2}Li_{2.8}O_{0.1}(PO₄)) 782495-54-9, Lithium zirconium oxide phosphate (Li_{2.8}Zr_{0.2}O_{0.3}(PO₄)) 782495-55-0, Lithium niobium oxide phosphate (Li_{2.8}Nb_{0.2}O_{0.4}(PO₄)) 782495-56-1, Lithium molybdenum oxide phosphate (Li_{2.8}Mo_{0.2}O_{0.5}(PO₄)) 782495-57-2, Lithium silver phosphate (Li_{2.8}Ag_{0.2}(PO₄)) 782495-58-3, Lithium tantalum oxide phosphate (Li_{2.8}Ta_{0.2}O_{0.4}(PO₄)) 782495-59-4, Lithium tungsten oxide phosphate (Li_{2.8}W_{0.2}O_{0.5}(PO₄)) 782495-60-7, Lithium titanium oxide phosphate (Li₄Ti_{0.25}O(PO₄)) 782495-61-8, Lithium vanadium oxide phosphate (Li_{3.75}V_{0.25}O(PO₄)) 782495-62-9, Chromium lithium oxide phosphate (Cr_{0.25}Li_{3.5}O(PO₄)) 782495-63-0, Lithium manganese oxide phosphate (Li_{3.25}Mn_{0.25}O(PO₄)) 782495-64-1, Lithium niobium oxide phosphate (Li_{3.75}Nb_{0.25}O(PO₄)) 782495-65-2, Lithium molybdenum oxide phosphate (Li_{3.5}Mo_{0.25}O(PO₄)) 782495-66-3, Lithium tantalum oxide phosphate (Li_{3.75}Ta_{0.25}O(PO₄)) 782495-69-6, Lithium tungsten oxide phosphate (Li_{3.02}W_{0.01}O_{0.04}(PO₄)) 782495-74-3, Lithium tungsten oxide phosphate (Li₅W₀₄(PO₄)) 782495-76-5, Lithium tungsten oxide phosphate (Li₇W₂₀₈(PO₄))

RL: TEM (Technical or engineered material use); USES (Uses)
(solid electrolytes containing lithium transition metal phosphorus oxides for secondary batteries)

AB The electrolyte, comprising Li, O, P and a transition metal element, is represented by Li_xSTyO_z (T = transition metal; x = 2-7; y = 0.01-1; and z = 3.5-8). The battery has the above electrolyte between a cathode and an anode.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:632469 CAPLUS

DOCUMENT NUMBER: 141:176832

TITLE: Nonaqueous electrolyte lithium ion secondary battery containing lithium-based composite metal oxide for improved discharge capacity and thermal stability

INVENTOR(S): Kubo, Koichi

PATENT ASSIGNEE(S): Toshiba Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004220801	A	20040805	JP 2003-3291	20030109
JP 3887317	B2	20070228		

PRIORITY APPLN. INFO.: JP 2003-3291 20030109

TI Nonaqueous electrolyte lithium ion secondary battery containing lithium-based composite metal oxide for improved discharge capacity and thermal stability

IT Secondary batteries
(lithium; pos. electrode of nonaq. electrolyte lithium ion secondary battery)

IT Battery electrodes
(pos. electrode of nonaq. electrolyte lithium ion secondary battery)

IT 530740-14-8, Molybdenum oxide phosphate (Mo2O3(PO4)2) 732298-51-0, Lithium molybdenum oxide phosphate (Li2MoO(PO4)) 732298-52-1, Lithium niobium oxide phosphate (Li2NbO(PO4)) 732298-53-2, Lithium tantalum oxide phosphate (Li2TaO(PO4)) 732298-54-3, Lithium tungsten oxide phosphate (Li2WO(PO4)) 732298-55-4, Iron lithium molybdenum oxide phosphate (Fe0.33Li2Mo0.67O(PO4)) 732298-56-5, Germanium lithium molybdenum oxide (GeLi2MoO5) 732298-58-7 732298-59-8, Iron lithium tantalum fluoride phosphate (Fe0.5Li2Ta0.5F(PO4)) 732298-60-1 732298-61-2 732298-62-3 732298-63-4, Lithium titanium oxide sulfate (Li2TiO(SO4)) 732298-64-5, Lithium titanium vanadium oxide sulfate (Li2Ti0.5V0.5O(SO4)) 732298-65-6, Lithium niobium vanadium oxide sulfate (Li2Nb0.5V0.5O(SO4)) 732298-66-7, Lithium molybdenum oxide phosphate (Li2MoO1.5(PO4)) 732298-67-8, Lithium titanium oxide phosphate (Li2TiO0.5(PO4)) 732298-68-9, Lithium tungsten oxide silicate (Li2WO(SiO4))

RL: DEV (Device component use); USES (Uses)
(pos. electrode of nonaq. electrolyte lithium ion secondary battery)

AB Disclosed is the nonaq. electrolyte lithium ion secondary battery comprising (a) a pos. electrode containing a metal oxide Li2-xM1-yM'yXzAO4 (M = Ti, Nb, etc.; M' = V, Cr, Mn, etc.; X = O, F; A = Si, Ge, P, S; 0 ≤ x ≤ 2; 0 ≤ y ≤ 0.5; and 0.5 ≤ z ≤ 1.5) having the tetragonal crystal structure, (b) a neg. electrode, and (c) a nonaq. electrolyte.

L4 ANSWER 16 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:546642 CAPLUS

DOCUMENT NUMBER: 141:91814

TITLE: Method of preparation of battery electrode active material

INVENTOR(S): Adamson, George; Barker, Jeremy; Ceder, Gerbrand; Dong, Ming; Morgan, Dane; Saidi, Yazid M.

PATENT ASSIGNEE(S): Valence Technology, Inc., USA

SOURCE: PCT Int. Appl., 71 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004057691	A1	20040708	WO 2003-US40930	20031219

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
 PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
 TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
 ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2455540	A1	20040619	CA 2003-2455540	20031219
US 20040131939	A1	20040708	US 2003-741257	20031219
AU 2003297466	A1	20040714	AU 2003-297466	20031219
EP 1500154	A1	20050126	EP 2003-793455	20031219
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1692510	A	20051102	CN 2003-80100192	20031219
CN 100334755	C	20070829		
JP 2006511038	T	20060330	JP 2004-544174	20031219
US 20060083990	A1	20060420	US 2005-291298	20051201
PRIORITY APPLN. INFO.:			US 2002-435144P	P 20021219
			US 2003-741257	A3 20031219
			WO 2003-US40930	W 20031219

TI Method of preparation of battery electrode active material
 IT Battery electrodes
 Secondary batteries
 (method of preparation of battery electrode active material)
 IT 714248-83-6P, Lithium vanadium phosphate (Li_{2.99}V₂(PO₄)₃) 714248-85-8P,
 Lithium vanadium phosphate (Li_{2.98}V₂(PO₄)₃) 714249-02-2P, Cobalt lithium
 phosphate (CoLi_{0.99}(PO₄)) 714249-20-4P, Iron lithium phosphate
 (FeLi_{0.99}(PO₄))
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (Nb-doped; method of preparation of battery electrode active material)
 IT 714248-75-6P, Lithium manganese phosphate (Li_{0.98}Mn(PO₄)) 714248-85-8P,
 Lithium vanadium phosphate (Li_{2.98}V₂(PO₄)₃) 714248-97-2P, Cobalt lithium
 phosphate (CoLi_{0.98}(PO₄)) 714249-17-9P, Iron lithium phosphate
 (FeLi_{0.98}(PO₄))
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (Zr-doped; method of preparation of battery electrode active material)
 IT 15365-14-7P, Iron lithium phosphate FeLi(PO₄) 554453-37-1P, Iron lithium
 zirconium phosphate 554453-39-3P, Iron lithium niobium phosphate
 554453-42-8P, Iron lithium magnesium phosphate 714248-65-4P
 714248-66-5P, Lithium manganese phosphate (Li_{0.99}Mn(PO₄)) 714248-67-6P,
 Lithium manganese niobium phosphate (Li_{0.97}MnNb_{0.01}(PO₄)) 714248-68-7P,
 Lithium manganese niobium phosphate (Li_{0.96}MnNb_{0.01}(PO₄)) 714248-69-8P
 714248-70-1P, Lithium magnesium manganese phosphate (Li_{0.98}Mg_{0.01}Mn(PO₄))
 714248-71-2P, Lithium magnesium manganese phosphate (Li_{0.96}Mg_{0.02}Mn(PO₄))
 714248-72-3P, Lithium magnesium manganese phosphate (Li_{0.94}Mg_{0.03}Mn(PO₄))
 714248-73-4P, Lithium magnesium manganese phosphate
 (Li_{0.98}Mg_{0.05}Mn_{0.96}(PO₄)) 714248-74-5P 714248-76-7P, Lithium manganese
 zirconium phosphate (Li_{0.96}MnZr_{0.01}(PO₄)) 714248-77-8P
 714248-79-0P, Lithium vanadium zirconium phosphate
 (Li_{2.96}V₂Zr_{0.01}(PO₄)₃) 714248-80-3P, Lithium vanadium zirconium
 phosphate (Li_{2.9V}₂Zr_{0.02}(PO₄)₃) 714248-81-4P, Lithium vanadium
 zirconium phosphate (Li_{2.8V}₂Zr_{0.05}(PO₄)₃) 714248-82-5P 714248-86-9P,
 Lithium niobium vanadium phosphate (Li_{2.97}Nb_{0.01}V₂(PO₄)₃) 714248-87-0P,
 Lithium niobium vanadium phosphate (Li_{2.96}Nb_{0.01}V₂(PO₄)₃) 714248-88-1P,
 Lithium niobium vanadium phosphate (Li_{2.95}Nb_{0.01}V₂(PO₄)₃) 714248-89-2P
 714248-90-5P, Lithium magnesium vanadium phosphate (Li_{2.98}Mg_{0.01}V₂(PO₄)₃)

714248-91-6P, Lithium magnesium vanadium phosphate (Li₂.94Mg_{0.03}V₂(PO₄)₃)
 714248-93-8P, Lithium magnesium vanadium phosphate (Li₂.9Mg_{0.05}V₂(PO₄)₃)
 714248-95-0P, Lithium magnesium vanadium phosphate (Li₂.8Mg_{0.1}V₂(PO₄)₃)
 714248-96-1P 714248-99-4P, Cobalt lithium zirconium phosphate
 (CoLi_{0.96}Zr_{0.01}(PO₄)) 714249-00-0P 714249-04-4P, Cobalt lithium
 niobium phosphate (CoLi_{0.97}Nb_{0.01}(PO₄)) 714249-07-7P, Cobalt lithium
 niobium phosphate (CoLi_{0.96}Nb_{0.01}(PO₄)) 714249-08-8P 714249-10-2P,
 Cobalt lithium magnesium phosphate (CoLi_{0.98}Mg_{0.01}(PO₄)) 714249-11-3P,
 Cobalt lithium magnesium phosphate (CoLi_{0.96}Mg_{0.02}(PO₄)) 714249-13-5P,
 Cobalt lithium magnesium phosphate (CoLi_{0.94}Mg_{0.03}(PO₄)) 714249-15-7P,
 Cobalt lithium magnesium phosphate (Co_{0.86}Li_{0.98}Mg_{0.05}(PO₄))
 714249-19-1P, Iron lithium zirconium phosphate (FeLi_{0.96}Zr_{0.01}(PO₄))
 714249-22-6P, Iron lithium niobium phosphate (FeLi_{0.97}Nb_{0.01}(PO₄))
 714249-23-7P, Iron lithium niobium phosphate (FeLi_{0.96}Nb_{0.01}(PO₄))
 714249-25-9P, Iron lithium magnesium phosphate (FeLi_{0.98}Mg_{0.01}(PO₄))
 714249-27-1P, Iron lithium magnesium phosphate (Fe_{0.96}LiMg_{0.04}(PO₄))
 714249-28-2P, Iron lithium magnesium phosphate (Fe_{0.96}Li_{0.98}Mg_{0.05}(PO₄))
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)

(method of preparation of battery electrode active
 material)

AB The invention provides an electrochem. cell which includes a first
 electrode and a second electrode which is a counter
 electrode to the first electrode, and an electrolyte
 material interposed there between. The first electrode includes
 an alkali metal phosphorous compound doped with an element having a valence
 state greater than that of the alkali metal.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:97868 CAPLUS

DOCUMENT NUMBER: 138:140078

TITLE: Alkali/transition metal halo- and hydroxy-phosphates
 and related electrode active materials

INVENTOR(S): Barker, Jeremy; Saidi, M. Yazid; Swoyer, Jeffrey L.

PATENT ASSIGNEE(S): Valence Technology Inc., UK

SOURCE: U.S. Pat. Appl. Publ., 22 pp., Cont.-in-part of U.S.
 6,387,568.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 20030027049	A1	20030206	US 2001-14822	20011026
US 6777132	B2	20040817		
US 6387568	B1	20020514	US 2000-559861	20000427
AT 317157	T	20060215	AT 2001-916649	20010314
TW 503596	B	20020921	TW 2001-90109979	20010426
US 20030013019	A1	20030116	US 2001-45685	20011107
US 6964827	B2	20051115		
US 20020168573	A1	20021114	US 2002-133091	20020426
US 6855462	B2	20050215		
CA 2463872	A1	20030508	CA 2002-2463872	20021018
WO 2003038930	A2	20030508	WO 2002-US33510	20021018
WO 2003038930	A3	20040422		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
 PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
 UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU	2002337911	A1	20030512	AU	2002-337911	20021018
EP	1444744	A2	20040811	EP	2002-773814	20021018
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK						
CN	1659728	A	20050824	CN	2002-821019	20021018
JP	2006516172	T	20060622	JP	2003-541083	20021018
US	20040265695	A1	20041230	US	2004-870135	20040616
US	7214448	B2	20070508			
US	20060014078	A1	20060119	US	2005-223082	20050909
US	7270915	B2	20070918			
US	20070009800	A1	20070111	US	2006-531824	20060914
US	7524584	B2	20090428			
US	20070190425	A1	20070816	US	2007-734678	20070412
US	20080241043	A1	20081002	US	2008-135271	20080609
PRIORITY APPLN. INFO.:				US	2000-559861	A2 20000427
				US	2001-14822	A2 20011026
				US	2001-45685	A3 20011107
				WO	2002-US33510	W 20021018
				US	2004-870135	A2 20040616
				US	2007-734678	A2 20070412
TI	Alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials					
IT	Battery cathodes					
	Hydrothermal reactions					
	(alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Chalcogenides					
	Olivine-group minerals					
	Oxides (inorganic), uses					
	RL: DEV (Device component use); USES (Uses)					
	(alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Carbonaceous materials (technological products)					
	RL: MOA (Modifier or additive use); USES (Uses)					
	(alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Reduction					
	(carbothermal; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Phosphates, uses					
	RL: DEV (Device component use); USES (Uses)					
	(halide; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Secondary batteries					
	(lithium; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	Halides					
	RL: DEV (Device component use); USES (Uses)					
	(phosphates; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 77641-62-4, Nasicon					
	RL: DEV (Device component use); USES (Uses)					
	(alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)					
IT	52934-02-8P, Cobalt lithium fluoride phosphate 52934-08-4P, Lithium					

nickel fluoride phosphate 257892-19-6P, Sodium vanadium fluoride phosphate (Na₃V₂F₃(PO₄)₂) 477779-87-6P, Sodium vanadium fluoride phosphate NaVFPO₄ 477779-89-8P, Lithium sodium vanadium fluoride phosphate (Li_{0.95}Na_{0.05}VF(PO₄)) 484039-84-1P, Cobalt lithium fluoride phosphate (CoLi₂F(PO₄)) 484039-86-3P, Iron lithium fluoride phosphate (FeLi₂F(PO₄)) 484039-88-5P 484039-91-0P, Lithium nickel fluoride phosphate (Li₂NiF(PO₄)) 484039-93-2P, Iron lithium fluoride phosphate 484039-95-4P, Lithium manganese fluoride phosphate (Li₂MnF(PO₄)) 484039-97-6P, Copper lithium fluoride phosphate (CuLi₂F(PO₄)) 484040-01-9P, Iron lithium magnesium fluoride phosphate (Fe_{0.9}Li_{1.25}Mg_{0.1}F_{0.25}(PO₄)) 484040-04-2P, Sodium vanadium fluoride phosphate (Na_{1.2}VF_{1.2}(PO₄)) 484040-06-4P, Chromium sodium fluoride phosphate 484040-08-6P, Manganese sodium fluoride phosphate (MnNaF(PO₄)) 484040-10-0P, Cobalt sodium fluoride phosphate (CoNaF(PO₄)) 484040-12-2P, Lithium sodium vanadium fluoride phosphate (Li_{0.1}Na_{0.9}VF(PO₄)) 484040-13-3P, Sodium vanadium hydroxide phosphate NaVOHPO₄ 484040-14-4P, Iron lithium fluoride phosphate (Fe₂Li₄F(PO₄)₃)) 484040-15-5P, Lithium vanadium fluoride phosphate (Li₄V₂F(PO₄)₃)) 484040-20-2P, Lithium manganese fluoride phosphate (Li₅Mn₂F₂(PO₄)₃) 484040-22-4P, Lithium vanadium fluoride phosphate (Li₆V₂F(PO₄)₃) 484040-25-7P, Chromium lithium sodium fluoride phosphate silicate (CrLiNa_{0.2}F(PO₄)_{0.8}(SiO₄)_{0.2}) 484040-27-9P 484040-28-0P 493025-03-9P, Lithium manganese fluoride phosphate 493025-04-0P, Copper lithium fluoride phosphate

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)

AB An electroactive material comprises: AaMb(XY₄)cZd, wherein (a) A is selected from the group consisting of Li, Na, and/or K, and a = 0-8; (b) M is ≥1 metal, comprising ≥1 metal which is capable of undergoing oxidation to a higher valence state, and b = 1-3; (c) XY₄ is selected from the group consisting of X'O₄-xY'_x, X'O₄-yY'_{2y}, X''S₄, and mixts. thereof, where X' is P, As, Sb, Si, and/or Ge; X'' is P, As, Sb, Si, and/or Ge; Y' is halogen, x = 0-3; and y = 0-4; and c = 0-3; (d) Z is OH and/or halogen, d = 0-6; and wherein M, X, Y, Z, a, b, c, d, x, and y are selected so as to maintain the electroneutrality of the compound Preferred embodiments include those having where c=1, those where c=2, and those where c=3. Preferred embodiments include those where a ≤1 and c=1, those where a=2 and c=1, and those where a ≥3 and c=3. This invention also provides electrodes comprising an electrode active material of this invention, and batteries that comprise a first electrode having an electrode active material of this invention; a second electrode having a compatible active material; and an electrolyte.

REFERENCE COUNT: 134 THERE ARE 134 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 18 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2003:42884 CAPLUS

DOCUMENT NUMBER: 138:92874

TITLE: Alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials

INVENTOR(S): Barker, Jeremy; Saidi, M. Yazid; Swoyer, Jeffery L.

PATENT ASSIGNEE(S): Valence Technology, Inc., USA

SOURCE: U.S. Pat. Appl. Publ., 22 pp., Cont.-in-part of U. S. 6,387,568.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	US 20030013019	A1	20030116	US 2001-45685	20011107
	US 6964827	B2	20051115		
	US 6387568	B1	20020514	US 2000-559861	20000427
	US 20030027049	A1	20030206	US 2001-14822	20011026
	US 6777132	B2	20040817		
	US 20050142056	A1	20050630	US 2005-905649	20050114
	US 7261977	B2	20070828		
	US 20060014078	A1	20060119	US 2005-223082	20050909
	US 7270915	B2	20070918		
PRIORITY APPLN. INFO.:				US 2000-559861	A2 20000427
				US 2001-14822	A2 20011026
				US 2001-45685	A1 20011107
				US 2002-133091	A1 20020426
TI	Alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials				
IT	Battery cathodes NASICONs (alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
IT	Carbonaceous materials (technological products) Oxides (inorganic), uses RL: DEV (Device component use); USES (Uses) (alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
IT	Secondary batteries (lithium; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
IT	Chalcogenides RL: DEV (Device component use); USES (Uses) (metal; alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
IT	7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 484039-84-1, Cobalt lithium fluoride phosphate (CoLi ₂ F(PO ₄)) 484039-86-3, Iron lithium fluoride phosphate (FeLi ₂ F(PO ₄)) 484039-88-5 RL: DEV (Device component use); USES (Uses) (alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
IT	52934-02-8P, Cobalt lithium fluoride phosphate 477779-87-6P, Sodium vanadium fluoride phosphate NaVFPO ₄ 484039-91-0P, Lithium nickel fluoride phosphate (Li ₂ NiF(PO ₄)) 484039-93-2P, Iron lithium fluoride phosphate 484039-95-4P, Lithium manganese fluoride phosphate (Li ₂ MnF(PO ₄)) 484039-97-6P, Copper lithium fluoride phosphate (CuLi ₂ F(PO ₄)) 484040-01-9P 484040-04-2P, Sodium vanadium fluoride phosphate (Na _{1.2} VF _{1.2} (PO ₄)) 484040-06-4P, Chromium sodium fluoride phosphate 484040-08-6P, Manganese sodium fluoride phosphate (MnNaF(PO ₄)) 484040-10-0P, Cobalt sodium fluoride phosphate (CoNaF(PO ₄)) 484040-12-2P 484040-13-3P, Sodium vanadium hydroxide phosphate (NaV(OH)(PO ₄)) 484040-14-4P, Iron lithium fluoride phosphate (Fe ₂ Li ₄ F(PO ₄) ₃) 484040-15-5P, Lithium vanadium fluoride phosphate (Li ₄ V ₂ F(PO ₄) ₃) 484040-20-2P, Lithium manganese fluoride phosphate (Li ₅ Mn ₂ F ₂ (PO ₄) ₃) 484040-22-4P, Lithium vanadium fluoride phosphate (Li ₆ V ₂ F(PO ₄) ₃) 484040-25-7P 484040-27-9P 484040-28-0P RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (alkali/transition metal halo- and hydroxy-phosphates and related electrode active materials)				
AB	Electrode active materials comprise lithium or other alkali metals, a transition metal, a phosphate or similar moiety, and a halogen				

or hydroxyl moiety. Such electrode actives include those of the formula: $AaMb(XY_4)cZd$ wherein (a) A is selected from the group consisting of Li, Na, K, and mixts. thereof, and $0 < a \leq 6$; (b) M comprises one or more metals, comprising at least one metal which is capable of undergoing oxidation to a higher valence state, and $1 \leq b \leq 3$; (c) XY_4 is selected from the group consisting of $X'O_4-xY'X_x$, $X'O_4-yY'2y$, $X''S_4$, and mixts. thereof, where X' is P, As, Sb, Si, Ge, S, and mixts. thereof; X'' is P, As, Sb, Si, Ge and mixts. thereof; Y' is halogen; $0 \leq x < 3$; and $0 < y < 4$; and $0 < c \leq 3$; (d) Z is OH, halogen, or mixts. thereof, and $0 < d \leq 6$; and wherein M, X, Y, Z, a, b, c, d, x and y are selected so as to maintain electroneutrality of the compound. In a preferred embodiment, M comprises two or more transition metals from Groups 4 to 11 of the Periodic Table. In another preferred embodiment, M comprises $M'^1-mM''^m$, where M' is at least one transition metal from Groups 4 to 11 of the Periodic Table; M'' is at least one element from Groups 2, 3, 12, 13, or 14 of the Periodic Table, and $0 < m < 1$. Preferred embodiments include those having where $c=1$, those where $c=2$, and those where $c=3$. Preferred embodiments include those where $a \leq 1$ and $c=1$, those where $a=2$ and $c=1$, and those where $a \geq 3$ and $c=3$. This invention also provides electrodes comprising an electrode active material of this invention, and batteries that comprise a first electrode having an electrode active material of this invention; a second electrode having a compatible active material; and an electrolyte.

REFERENCE COUNT: 127 THERE ARE 127 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 19 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2002:256645 CAPLUS

DOCUMENT NUMBER: 136:297382

TITLE: Carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes

INVENTOR(S): Armand, Michel; Gauthier, Michel; Magnan, Jean-Francois; Ravet, Nathalie

PATENT ASSIGNEE(S): Hydro-Quebec, Can.

SOURCE: PCT Int. Appl., 78 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002027824	A1	20020404	WO 2001-CA1350	20010921
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2320661	A1	20020326	CA 2000-2320661	20000926
CA 2423129	A1	20020404	CA 2001-2423129	20010921
AU 2001093569	A	20020408	AU 2001-93569	20010921
EP 1325526	A1	20030709	EP 2001-973907	20010921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

JP 2004509058	T	20040325	JP 2002-531518	20010921
CN 100421289	C	20080924	CN 2001-816319	20010921
US 20040086445	A1	20040506	US 2003-362764	20030619
US 7285260	B2	20071023		
US 20070134554	A1	20070614	US 2007-655084	20070119
US 7457018	B2	20081125		
PRIORITY APPLN. INFO.:			CA 2000-2320661	A 20000926
			WO 2001-CA1350	W 20010921
			US 2003-362764	A1 20030619
TI	Carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes			
IT	Silanes			
	RL: RCT (Reactant); RACT (Reactant or reagent)			
	(alkoxy, silicon source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	Polyoxyalkylenes, uses			
	RL: NUU (Other use, unclassified); USES (Uses)			
	(alkyl ethers, oligomeric, aprotic solvent; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	Fluoropolymers, uses			
	Polyesters, uses			
	Polyethers, uses			
	RL: NUU (Other use, unclassified); USES (Uses)			
	(binders; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	Battery cathodes			
	Battery electrodes			
	Redox agents			
	(carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	Transition metals, uses			
	RL: TEM (Technical or engineered material use); USES (Uses)			
	(electrodes containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	78-93-3, Methyl ethyl ketone, uses 96-48-0, Butyrolactone 96-49-1, Ethylene carbonate 107-21-1D, Ethylene glycol, alkyl ethers 108-32-7, Propylene carbonate 111-46-6D, Diethylene glycol, alkyl ethers 112-27-6D, Triethylene glycol, alkyl ethers 112-60-7D, Tetraethylene glycol, alkyl ethers 463-79-6D, Carbonic acid, C1-4-alkyl esters			
	RL: NUU (Other use, unclassified); USES (Uses)			
	(aprotic solvent; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	9011-14-7, Poly(methyl methacrylate) 24937-79-9, Poly(vinylidene difluoride) 25014-41-9, Polyacrylonitrile			
	RL: NUU (Other use, unclassified); USES (Uses)			
	(binders; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)			
IT	50-99-7, Glucose, reactions 57-48-7, Fructose, reactions 57-50-1, Sucrose, reactions 58-86-6, Xylose, reactions 87-79-6, Sorbose 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9004-34-6, Cellulose, reactions 9004-34-6D, Cellulose, esters 9004-35-7, Cellulose acetate 9005-25-8, Starch, reactions 25212-86-6, Poly(furfuryl alcohol) 43094-71-9, Ethylene-ethylene oxide copolymer			
	RL: RCT (Reactant); RACT (Reactant or reagent)			
	(carbon source; carbon-coated or carbon-crosslinked redox materials			

with transition metal-lithium oxide core for use as battery electrodes)

IT 407640-63-5, Iron lithium titanium phosphate sulfate ($\text{Fe}_{0.85}\text{Li}_{1.35}\text{Ti}_{0.15}(\text{PO}_4)_0.5(\text{SO}_4)$)
 RL: DEV (Device component use); USES (Uses)
 (electrodes containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 7439-89-6D, Iron, mixed oxides 7439-96-5D, Manganese, mixed oxides
 7440-02-0D, Nickel, mixed oxides 7440-32-6D, Titanium, mixed oxides
 7440-47-3D, Chromium, mixed oxides 7440-48-4D, Cobalt, mixed oxides
 7440-50-8D, Copper, mixed oxides 7440-62-2D, Vanadium, mixed oxides
 13816-45-0, Triphylite 15365-14-7, Iron lithium phosphate (FeLiPO_4)
 213467-46-0, Iron lithium manganese phosphate ($\text{FeLi}_2\text{Mn}(\text{PO}_4)_2$)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (electrodes containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 90076-65-6
 RL: NUU (Other use, unclassified); USES (Uses)
 (electrolyte containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 516-03-0, Ferrous oxalate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (iron source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 7429-90-5, Aluminum, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses
 7440-66-6, Zinc, uses 7782-42-5, Graphite, uses 39302-37-9, Lithium titanate
 207803-50-7, Aluminum cobalt lithium magnesium nickel oxide 258511-24-9, Iron lithium nitride 263898-18-6, Cobalt manganese nitride 407640-62-4
 RL: DEV (Device component use); USES (Uses)
 (lithium-based cathodes containing; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 638-38-0, Manganese(II) acetate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (manganese source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 546-89-4, Lithium acetate 553-91-3, Lithium oxalate 554-13-2, Lithium carbonate
 1309-37-1, Ferric oxide, reactions 1310-65-2, Lithium hydroxide 1313-13-9, Manganese dioxide, reactions 1314-62-1, Vanadium pentoxide, reactions 1317-61-9, Magnetite, reactions 10045-86-0, Ferric phosphate
 10102-24-6, Lithium silicate (Li_2SiO_3) 10377-48-7, Lithium sulfate 10377-52-3, Lithium phosphate (Li_3PO_4) 10421-48-4, Ferric nitrate
 12057-24-8, Lithium oxide, reactions 12627-14-4 13453-80-0, Lithium dihydrogen phosphate 63985-45-5, Lithium orthosilicate
 407640-52-2, Iron lithium manganese phosphate ($\text{Fe}_{0.1}\text{LiMn}_{0.9}(\text{PO}_4)$) 407640-53-3, Iron lithium magnesium phosphate ($\text{Fe}_{0.7}\text{LiMg}_{0.3}(\text{PO}_4)$)
 407640-54-4, Calcium iron lithium phosphate ($\text{Ca}_{0.3}\text{Fe}_{0.7}\text{Li}(\text{PO}_4)$) 407640-55-5 407640-56-6, Iron lithium phosphate silicate ($\text{FeLi}_{1-1.9}(\text{PO}_4)_0.1\text{Li}(\text{SiO}_4)_0.9$) 407640-57-7
 407640-58-8, Iron lithium manganese phosphate sulfate ($\text{Fe}_{0.1}\text{Li}_{1-1.2}\text{Mn}_{0.2}[(\text{PO}_4), (\text{SO}_4)]$) 407640-59-9, Iron lithium manganese phosphate ((Fe,Mn)Li_{1-1.6}(PO₄)) 407640-60-2, Iron lithium manganese phosphate sulfate (Fe₁₋₂Li₁₋₂Mn₀₋₁[(PO₄), (SO₄)] 407640-61-3, Iron lithium titanium phosphate ((Fe,Ti)Li_{0.5-2}(PO₄)_{1.5})
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (metal source; carbon-coated or carbon-crosslinked redox materials with

transition metal-lithium oxide core for use as battery electrodes)

IT 25322-68-3D, Polyethylene glycol, alkyl ethers
 RL: NUU (Other use, unclassified); USES (Uses)
 (oligomeric, aprotic solvent; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 7664-38-2, Phosphoric acid, reactions 7664-38-2D, Phosphoric acid, esters 7783-28-0, Ammonium hydrogen phosphate 10124-54-6, Manganese phosphate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (phosphorus source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 7631-86-9, Silica, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (silicon source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

IT 7664-93-9, Sulfuric acid, reactions 7783-20-2, Ammonium sulfate, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (sulfur source; carbon-coated or carbon-crosslinked redox materials with transition metal-lithium oxide core for use as battery electrodes)

AB Carbon-coated redox materials suitable for use in battery electrodes consist of a core surrounded by a coating, or interconnected by carbon crosslinks, in which the core includes a composition of formula $\text{Li}_x\text{M}_1-\text{yM}'\text{y}(\text{XO}_4)_n$, in which $y = 0-0.6$, $x = 0-2$, $n = 0-1.5$; M is a transition metal; and M' is a element of fixed valence selected from Mg^{2+} , Ca^{2+} , Al^{3+} , and Zn^{2+} , and X is S, P, and Si. Synthesis of the materials is carried out by reacting a balanced mixture of appropriate precursors in a reducing atmospheric, to adjust the valence of the transition metals, in the presence of a carbon source, which is then pyrolyzed. The resulting products exhibit an excellent elec. conductivity and a highly enhanced chemical activity.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 20 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:414793 CAPLUS

DOCUMENT NUMBER: 135:35187

TITLE: Batteries comprising solid electrolytes sandwiched in between spinel-type lithium manganate cathodes and spinel-type lithium titanate anodes

INVENTOR(S): Hara, Toru; Kitahara, Nobuyuki; Uemura, Toshihiko; Mishima, Hiromitsu; Magome, Shinji; Osaki, Makoto; Higuchi, Hisashi

PATENT ASSIGNEE(S): Kyocera Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2001155763	A	20010608	JP 1999-336715	19991126
PRIORITY APPLN. INFO.:			JP 1999-336715	19991126

TI Batteries comprising solid electrolytes sandwiched in between
 spinel-type lithium manganate cathodes and spinel-type lithium titanate
 anodes
 IT Battery anodes
 Battery cathodes
 Battery electrolytes
 Solid state secondary batteries
 (batteries comprising lithium titanium phosphate silicate
 electrolytes showing low surface resistances with lithium spinel oxide
 electrodes for use in personal digital assistances)
 IT 123921-35-7, Lithium titanium oxide ($\text{Li}_{1.33}\text{Ti}_{1.67}\text{O}_4$) 343950-34-5,
 Lithium titanium oxide ($\text{Li}_{1.25-1.4}\text{Ti}_{1.6-1.75}\text{O}_4$)
 RL: DEV (Device component use); USES (Uses)
 (anode; batteries comprising lithium titanium
 phosphate silicate electrolytes showing low surface resistances with
 lithium spinel oxide electrodes for use in personal digital
 assistances)
 IT 343950-44-7
 RL: DEV (Device component use); USES (Uses)
 (cathode-side electrolyte; batteries comprising lithium
 titanium phosphate silicate electrolytes showing low surface
 resistances with lithium spinel oxide electrodes for use in
 personal digital assistances)
 IT 155472-68-7, Lithium manganese oxide ($\text{Li}_{1.1}\text{Mn}_{1.9}\text{O}_4$) 335638-14-7, Lithium
 manganese oxide ($\text{Li}_{1.05-1.2}\text{Mn}_{1.8-1.95}\text{O}_4$) 343950-32-3, Lithium manganese
 nickel oxide ($\text{Li}_{1-1.2}\text{Mn}_{0.4-0.6}\text{Ni}_{0.2-0.6}\text{O}_4$)
 RL: DEV (Device component use); USES (Uses)
 (cathode; batteries comprising lithium titanium phosphate
 silicate electrolytes showing low surface resistances with lithium
 spinel oxide electrodes for use in personal digital
 assistances)
 IT 12031-82-2, Lithium titanium oxide (Li_2TiO_3)
 RL: DEV (Device component use); USES (Uses)
 (electrolyte on anode side containing; batteries
 comprising lithium titanium phosphate silicate electrolytes showing low
 surface resistances with lithium spinel oxide electrodes for
 use in personal digital assistances)
 IT 12163-00-7, Lithium manganese oxide (Li_2MnO_3)
 RL: DEV (Device component use); USES (Uses)
 (electrolyte on cathode side containing; batteries comprising
 lithium titanium phosphate silicate electrolytes showing low surface
 resistances with lithium spinel oxide electrodes for use in
 personal digital assistances)
 IT 343950-37-8 343950-39-0 343950-42-5
 RL: DEV (Device component use); USES (Uses)
 (electrolyte; batteries comprising lithium titanium phosphate
 silicate electrolytes showing low surface resistances with lithium
 spinel oxide electrodes for use in personal digital
 assistances)
 AB The batteries comprise solid electrolytes of (A) sintered
 materials of Li_2MnO_3 and $\text{Li}_{1+x+y}\text{M}_x\text{Ti}_{2-x}\text{Si}_y\text{P}_3\text{O}_{12}$ (I ; $\text{M} = \text{Al}$ or Ga ; $x =$
 $0-0.4$; $0 < y \leq 0.6$) on the cathode side and (B) sintered materials
 of Li_2TiO_3 and I on the anode side, sandwiched in between the
 electrodes and placed in an outer package. Such batteries
 with cathodes consisting of $\text{Li}_{1+x}\text{Mn}_{2-x}\text{O}_4$ ($x = 0.05-0.2$) or
 $\text{Li}_{1+x}\text{Ni}_y\text{Mn}_{2-x-y}\text{O}_4$ ($x = 0-0.2$; $0.4 \leq y < 0.6$) and anodes
 consisting of $\text{Li}_{1+x}\text{Ti}_{2-x}\text{O}_4$ ($x = 0.25-0.40$) are also claimed.
 Batteries with low surface resistance between the
 electrodes and the electrolytes are obtained. The
 batteries are suitable for use in personal digital assistance.

ACCESSION NUMBER: 2001:179635 CAPLUS
 DOCUMENT NUMBER: 134:210518
 TITLE: Process for large scale fabrication of lithium polymer
 batteries with solid electrolytes in the film
 technology
 INVENTOR(S): Meislitzer, Karl Heinz
 PATENT ASSIGNEE(S): Bangert, Wolfgang, Germany; Sebastian, Rudolf
 SOURCE: Ger. Offen., 12 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
DE 19941861	A1	20010315	DE 1999-19941861	19990902
PRIORITY APPLN. INFO.:			DE 1999-19941861	19990902
II	Process for large scale fabrication of lithium polymer batteries with solid electrolytes in the film technology			
IT	Polyurethanes, uses RL: TEM (Technical or engineered material use); USES (Uses) (acrylates, coatings; process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	Secondary batteries (lithium; process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	Battery anodes Battery cathodes Films (process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	Fluoropolymers, uses Polyoxyalkylenes, uses RL: DEV (Device component use); USES (Uses) (process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	7440-44-0, Carbon, uses RL: MOA (Modifier or additive use); USES (Uses) (amorphous; process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	7440-50-8, Copper, uses RL: DEV (Device component use); USES (Uses) (film, current collector; process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	84-74-2, Dibutyl phthalate 117-84-0, Dioctyl phthalate RL: DEV (Device component use); USES (Uses) (plasticizer; process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	9002-86-2, Polyvinyl chloride 9003-53-6, Polystyrene 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 11099-11-9, Vanadium oxide 12031-65-1, Lithium nickel oxide linio2 12057-17-9, Lithium manganese oxide limn2o4 12190-79-3, Cobalt lithium oxide colio2 24937-79-9, Polyvinylidene fluoride 25322-68-3, Peo 131344-56-4, Cobalt lithium nickel oxide RL: DEV (Device component use); USES (Uses) (process for large scale fabrication of lithium polymer batteries with solid electrolytes in film technol.)			
IT	7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 14283-07-9, Lithium tetrafluoroborate 30622-39-0, Lithium titanium phosphate			

LiTi₂(PO₄)₃ 120479-61-0, Aluminum lithium titanium phosphate
Al_{0.3}Li_{1.3}Ti_{1.7}(PO₄)₃ 138728-82-2, Lithium phosphate silicate
(Li_{3.5}(PO₄)_{0.5}(SiO₄)_{0.5}) 180728-17-0, Aluminum lithium oxide silicate
(AlLi₉O₄(SiO₄)) 328899-26-9, Lithium titanium oxide phosphate
(Li₃Ti₂O(PO₄)₃)

RL: DEV (Device component use); MOA (Modifier or additive use); USES
(Uses)

(process for large scale fabrication of lithium polymer
batteries with solid electrolytes in film technol.)

IT 7782-42-5, Graphite, uses

RL: MOA (Modifier or additive use); USES (Uses)

(process for large scale fabrication of lithium polymer
batteries with solid electrolytes in film technol.)

IT 67-64-1, Acetone, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(process for large scale fabrication of lithium polymer
batteries with solid electrolytes in film technol.)

AB Films for cathodes and anodes as well as for the electrolytes

are pulled from pastes of suitable composition and preparation Cathode pastes
are

prepared from: 3-10% polymer or copolymer, PEO, polystyrene, polyvinyl
chloride, polyvinylidene fluoride, or polyvinylidene
fluoride-hexafluoropropylene copolymer (PVDF-HFP); 4-12% plasticizer
(e.g., dibutylphthalate or dioctyl phthalate); 20-60 g% intercalation
material (e.g., LiCoO₂, LiNiO₂, LiCo_xNi_{1-x}O₂, LiMn₂O₄ or VO_x); 2-10% elec.
conductor (e.g., graphite powder or amorphous C); and 40-80% solvent
(e.g., acetone). Anode paste comprises: 3-10% polymer or
copolymer (e.g., PEO, polystyrene, PVC, PVDF, or PVDF-HFP copolymer),
4-12% plasticizer (di-Bu phthalate or dioctyl phthalate), 20-40% elec.
conductor (graphite powder or amorphous C), and 40-80% solvent (acetone).
The electrolyte paste comprises: 3-10 g% polymer or copolymer (PEO,
polystyrene, PVC, PVDF or hexafluoropropylene-vinylidene fluoride
copolymer), 4-12% plasticizer (DBP or DOP), 20-40% ionic conductor
(Li₉AlSiO₈, Li_{1.3}Al_{0.3}Ti_{1.7}(PO₄)₃, LiTi₂(PO₄)₃, Li₂O or Li₄SiO₄.Li₃PO₄),
2-10% ionic conductor (LiClO₄, LiBF₄, LiCl, LiBr, or LiI) and 40-80 g%
solvent (acetone).

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 22 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:197818 CAPLUS

DOCUMENT NUMBER: 132:224820

TITLE: Lithium vanadium phosphate composite compound and its
use as positive electrode for lithium ion
secondary battery

INVENTOR(S): Sato, Mineo; Toda, Kenji; Imanaka, Nobuto

PATENT ASSIGNEE(S): Osaka University, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000086215	A	20000328	JP 1998-261930	19980916
JP 2949229	B2	19990913		

PRIORITY APPLN. INFO.: JP 1998-261930 19980916

TI Lithium vanadium phosphate composite compound and its use as positive
electrode for lithium ion secondary battery

IT Battery electrodes

(lithium vanadium phosphate composite compound and its use as pos. electrode for lithium ion secondary battery)

IT 261515-93-9, Aluminum lithium vanadium phosphate (Al₀-0.2Li₃V_{0.8}-1(PO₄)₃)
 261515-94-0, Lithium titanium vanadium phosphate (Li_{2.6}-3Ti₀-0.2V_{0.8}-1(PO₄)₃) 261515-95-1, Lithium vanadium zirconium phosphate (Li_{2.6}-3V_{0.8}-1Zr₀-0.2(PO₄)₃)
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (lithium vanadium phosphate composite compound and its use as pos. electrode for lithium ion secondary battery)

AB Lithium vanadium phosphate composite compds. have the following formula Li_y(V_{1-x}M_x)₂(PO₄)₃ where M is selected from aluminum, titanium and zirconium, 0<x≤0.2, and y is 3 when M is aluminum and or y is 3-2x when M is titanium or zirconium. The composite compound which possesses excellent charge-discharge behavior can be used as the pos. electrode for the lithium ion secondary battery.

L4 ANSWER 23 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:15552 CAPLUS
 DOCUMENT NUMBER: 132:52431
 TITLE: Method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries
 INVENTOR(S): Barker, Jeremy
 PATENT ASSIGNEE(S): Valence Technology, Inc., USA
 SOURCE: PCT Int. Appl., 46 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000001024	A1	20000106	WO 1999-US11217	19990520
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6136472	A	20001024	US 1998-105748	19980626
CA 2333577	A1	20000106	CA 1999-2333577	19990520
AU 9940918	A	20000117	AU 1999-40918	19990520
EP 1090435	A1	20010411	EP 1999-924410	19990520
EP 1090435	B1	20040804		
R: DE, ES, FR, GB, IT, IE				
JP 2002519836	T	20020702	JP 2000-557507	19990520
EP 1282181	A2	20030205	EP 2002-25070	19990520
EP 1282181	A3	20050330		
R: DE, ES, FR, GB, IT, IE				
HK 1036883	A1	20050429	HK 2001-105569	20010810
PRIORITY APPLN. INFO.:			US 1998-105748	A1 19980626
			EP 1999-924410	A3 19990520
			WO 1999-US11217	W 19990520

TI Method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries

IT Secondary batteries
 (lithium; method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries)

IT Battery cathodes
(method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries)

IT Phosphates, uses
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(silico-; method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries)

IT 252943-44-5, Lithium vanadium phosphate silicate (Li3V2(PO4)2(SiO4))
252943-46-7 252943-47-8 252943-48-9 252943-49-0
252943-50-3, Lithium vanadium phosphate silicate
(Li3.5V2(PO4)2.5(SiO4)0.5) 252943-51-4
RL: DEV (Device component use); USES (Uses)
(method of preparation of lithium-containing silicophosphates for electrode active material of lithium batteries)

AB The invention provides a new electrode active material and cells and batteries which utilize such active material. The active material is represented by the nominal general formula $\text{Li}_a\text{M}'(2-b)\text{M}''\text{bSi}_c\text{P}(3-c)\text{O}_{12}$, $0 \leq b \leq 2$, $0 < c < 3$. M' and M'' are each elements selected from the group consisting of metal and metalloid elements. The value of the variable a depends upon the selection of M' and M'' and on the relative proportions designated as b and c.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 24 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:197714 CAPLUS
DOCUMENT NUMBER: 128:232794
ORIGINAL REFERENCE NO.: 128:46045a, 46048a
TITLE: Lithium-containing, lithium-intercalating phosphates and their use as electrode material in secondary lithium-ion battery
INVENTOR(S): Barker, Jeremy; Saidi, Mohamed-Yazid
PATENT ASSIGNEE(S): Valence Technology, Inc., USA
SOURCE: PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9812761	A1	19980326	WO 1997-US15544	19970904
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5871866	A	19990216	US 1996-717979	19960923
CA 2266365	A1	19980326	CA 1997-2266365	19970904
AU 9744102	A	19980414	AU 1997-44102	19970904
EP 931361	A1	19990728	EP 1997-942393	19970904
EP 931361	B1	20011205		
R: DE, ES, FR, GB, IT, IE				
JP 2001500665	T	20010116	JP 1998-514693	19970904
EP 1093174	A1	20010418	EP 2001-200220	19970904
EP 1093174	B1	20031217		

R: DE, ES, FR, GB, IT, IE				
ES 2169425	T3	20020701	ES 1997-942393	19970904
EP 1403945	A1	20040331	EP 2003-25462	19970904
EP 1403945	B1	20060301		
R: DE, ES, FR, GB, IT, IE				
ES 2258196	T3	20060816	ES 2003-25462	19970904
KR 2000036230	A	20000626	KR 1999-702302	19990318
HK 1023850	A1	20020823	HK 2000-100559	20000128
US 20010021472	A1	20010913	US 2001-776843	20010205
US 6720110	B2	20040413		

PRIORITY APPLN. INFO.:

US 1996-717979	A1	19960923
EP 1997-942393	A3	19970904
WO 1997-US15544	W	19970904
US 1998-204944	A1	19981203
EP 2001-200220	A3	20010123

TI Lithium-containing, lithium-intercalating phosphates and their use as electrode material in secondary lithium-ion battery

IT Battery electrodes
(lithium-intercalating phosphates)

IT 84159-18-2P, Lithium vanadium phosphate (Li3V2(PO4)3)
RL: DEV (Device component use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(cathode material for secondary lithium-ion battery)

IT 36058-25-0, Iron lithium phosphate (Fe2Li3(PO4)3) 186131-68-0, Iron lithium vanadium phosphate (FeLi3V(PO4)3) 204653-31-6, Lithium titanium vanadium phosphate (Li3TiV(PO4)3) 204653-32-7, Aluminum lithium vanadium phosphate (AlLi3V(PO4)3) 204653-33-8, Chromium lithium potassium phosphate (CrLi3K(PO4)3) 204653-34-9, Lithium molybdenum potassium phosphate (Li3MoK(PO4)3)
RL: TEM (Technical or engineered material use); USES (Uses)
(electrode material for secondary lithium-ion battery
)

AB The phosphates comprise Li(3-x)MM'(PO4)3, where in the 1st condition x = 0, at least 1 of M and M' is a metal, and M and M' are the same or different from one another; and in the 2nd condition 0 < x ≤ 3 and at least 1 of M and M' has an oxidation state higher than its oxidation state in the 1st condition P compound One of M and M' is selected from Mg, Ca, Cu, Co, Fe, Ni, Mo, V, Cr, Mn, and Ti. The phosphates comprise Li3V2(PO4)3, Li3VTi(PO4)3, Li3Fe2(PO4)3, and Li3FeV(PO4)3.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 25 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1995:820825 CAPLUS
DOCUMENT NUMBER: 123:233358
ORIGINAL REFERENCE NO.: 123:41567a, 41570a
TITLE: Secondary alkali metal battery and its electrolyte
INVENTOR(S): Coetzer, Johan
PATENT ASSIGNEE(S): Lilliwytte S. A., Luxembourg
SOURCE: S. African, 30 pp.
CODEN: SFXXAB
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
ZA 9201893	A	19930913	ZA 1992-1893	19920313
PRIORITY APPLN. INFO.:			ZA 1991-1900	A 19910314
TI			Secondary alkali metal battery and its electrolyte	

IT Battery electrolytes
(alkali metal haloalkylaluminates and/or borates)

IT 12005-14-0, Aluminum lithium oxide (Al₅LiO₈) 12005-16-2, Aluminum sodium oxide (Al₅NaO₈) 12005-48-0, Aluminum sodium oxide (Al₁₁NaO₁₇) 12505-59-8, Aluminum lithium oxide (Al₁₁LiO₁₇) 58572-20-6, Sodium zirconium phosphate silicate (Na₃Zr₂(PO₄)(SiO₄)₂) 81295-89-8, Lithium zirconium phosphate silicate (Li₃Zr₂(PO₄)(SiO₄)₂)
RL: DEV (Device component use); USES (Uses)
(alkali metal battery separator)

IT 2397-68-4, Sodium tetraethyl aluminate 2666-13-9, Lithium tetraethyl aluminate 14568-29-7 15003-13-1, Lithium tetraethyl borate 15363-51-6, Sodium tetrabutyl aluminate 15523-24-7, Sodium tetraethyl borate 17979-83-8, Sodium tetrabutyl borate 168277-77-8 168475-28-3
RL: DEV (Device component use); USES (Uses)
(battery electrolyte)

AB The battery has an alkali metal anode, a transition metal halide cathode, and ≥ 1 liquid electrolyte M_xAR_pX_q, where M is an alkali metal or a mixture of these metals; A is selected from Al, B, and/or Zn; R is an organic radical or a mixture of these radicals; X is selected from organic radicals and/or halogens; x is ≥ 1 ; p is ≥ 1 ; q is ≤ 3 ; and p + q is ≥ 4 when A is selected from Al and/or B, and ≥ 3 when A is selected from Zn and mixts. comprising Zn.

L4 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1991:665266 CAPLUS

DOCUMENT NUMBER: 115:265266

ORIGINAL REFERENCE NO.: 115:44917a,44920a

TITLE: Intercalation in 3D-skeleton structures: ionic and electronic features

AUTHOR(S): Hagenmuller, Paul; Delmas, Claude

CORPORATE SOURCE: Lab. Chimie Solide, Univ. Bordeaux I, Talence, 33405, Fr.

SOURCE: Materials Research Society Symposium Proceedings (1991), 210(Solid State Ionics 2), 323-34
CODEN: MRSPDH; ISSN: 0272-9172

DOCUMENT TYPE: Journal

LANGUAGE: English

TI Intercalation in 3D-skeleton structures: ionic and electronic features

IT Alkali metals, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(intercalation of, electrochem., in molybdates or niobates or phosphates)

IT Energy level, band structure
(of molybdates or niobates or phosphates, alkali metal intercalation in relation to)

IT Redox reaction
(electrochem., of molybdates or niobates or phosphates, in medium containing alkali metals, intercalation in relation to)

IT Energy level
(electronic, in niobates or molybdates or phosphates, alkali metal intercalation in relation to)

IT Inclusion reaction
(intercalation, electrochem., of alkali metals in niobates or molybdates or phosphates)

IT Ultraviolet and visible spectra
(reflection, of alkali metal niobate intercalate)

IT 119536-20-8, Lithium titanium phosphate (Li₁₋₃Ti₂(PO₄)₃) 119536-21-9, Sodium titanium phosphate (Na₁₋₃Ti₂(PO₄)₃)
RL: PRP (Properties)
(charging and discharging of, intercalation in relation to)

IT 137486-03-4, Lithium neodymium niobium oxide (Li_{0-0.8}Nd_{0.33}NbO₃)

RL: PRP (Properties)
 (electrochem. formation in electrochem. intercalation of lithium in neodymium niobate)

IT 12142-62-0, Lanthanum niobium oxide (LaNb3O9) 12164-48-6, Neodymium niobium oxide (NdNb3O9) 13769-81-8, Iron molybdate (Fe2(MoO4)3)
 RL: PRP (Properties)
 (electrochem. intercalation of alkali metals in)

IT 89623-86-9
 RL: PRP (Properties)
 (electrochem. intercalation of lithium in)

IT 7440-23-5, Sodium, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (electrochem. intercalation of, in iron molybdate)

IT 7439-93-2, Lithium, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (electrochem. intercalation of, in niobates or molybdates)

IT 137486-02-3P, Lanthanum lithium niobium oxide (La0.33Li0.08NbO3)
 RL: PREP (Preparation)
 (formation of, electrochem., in intercalation of lithium in lanthanum niobate)

IT 116589-81-2, Lanthanum lithium niobium oxide (La0.33Li0.02NbO3)
 137486-00-1, Lanthanum lithium niobium oxide (La0.33Li0.07NbO3)
 137486-01-2, Lanthanum lithium niobium oxide (La0.33Li0.01NbO3)
 RL: PROC (Process)
 (optical reflection of)

AB The voltage of an electrochem. cell, i.e. the difference between the chemical potentials of the two electrodes, may play the role of a sensor which allows to display the structural modifications and the phys. properties. The electrochem. processes involved in an alkali metal (A) intercalation electrode emphasize the influence of the ionic and/or electronic features. The A+-lattice and A+-A+ interactions as well as electronic band-filling may lead to phase transitions or even limit the intercalation reaction. The shape of the cell voltage vs. intercalation rate curve depends on the number of vacant sites available for intercalation, the number and the oxidation state of the reducible cations, the band structure of the material and the covalency of the framework. Alkali ion intercalation in 3D-structures related to perovskite (Ln1/3NbO3), hexagonal tungsten bronze (LiW3O9F) and Nasicon-type (AM2(PO4)3) is discussed from that point of view. In Ln1/3NbO3 (Ln = La, Nd) (i.e. .box. 1/2Ln1/3.box.'1/6NbO3) Li+ intercalation in various sites is related to the rare earth size. Two extra lithium atoms can be introduced into LiW3O9F in which four sites are available, but only one out of two is occupied in order to reduce the electrostatic interactions. Moreover the change in the discharge curves can be associated to the modifications with intercalation rate of the Li+-lattice interactions. Within the Nasicon derived structures of ATi2(PO4)3 and Fe2(MoO4)3 the intercalation process is limited by the lowest stable oxidation state of titanium or iron. In both systems the strong electronic localization leads to formation of large two phase-domains. The relevance of using 3D-intercalation electrodes in electrochem. power batteries will be discussed as for factors such as elec. behavior or absence of significant unit cell modifications of the pos. electrodes during the intercalation process are essential for many cycle utilizations.

L4 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1982:151389 CAPLUS

DOCUMENT NUMBER: 96:151389

ORIGINAL REFERENCE NO.: 96:24769a,24772a

TITLE: Lithium anode battery

PATENT ASSIGNEE(S): Nippon Telegraph and Telephone Public Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 56162477	A	19811214	JP 1980-65972	19800520
PRIORITY APPLN. INFO.:				JP 1980-65972	A 19800520
TI	Lithium anode battery				
IT	Anodes				
	(battery, lithium)				
IT	Cathodes				
	(battery, lithium zinc germanate and lithium zirconium phosphate silicate)				
IT	7439-93-2, uses and miscellaneous				
	RL: USES (Uses)				
	(anodes, battery)				
IT	70780-99-3 81295-89-8				
	RL: PRP (Properties)				
	(cathodes, in lithium batteries)				
AB	A Li anode battery employs Li ₃ Zr ₂ Si ₂ PO ₁₂ or Li ₁₄ Zn(GeO ₄) ₄ as the cathode active material and an electrolyte which is stable towards the cathode-active material and Li, Li ⁺ being transported to effect an electrochem. reaction with the cathode active material.				

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	111.05	205.10
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-21.32	-21.32

SESSION WILL BE HELD FOR 120 MINUTES
 STN INTERNATIONAL SESSION SUSPENDED AT 17:41:24 ON 05 MAY 2009